1 Revision

1. a. 2436 – Two thousand four hundred thirty six
b. 4946 – Four thousand nine hundred fourty six
c. 7234 – Seven thousand two hundred thirty-four
d. 8346 – Eight thousand three hundred fourty-six

2. a. 4324, 7346, (8349) b. 2349, (2692), 2384
c. 7293, (8349), 7469 d. 6324, 6743, (6894)

3. a. 2868, 2949, (2834) b. (3492), 3784, 4321
c. 6932, (6249), 8649 d. (4369), 8947, 7249

4. a. 3421 b. 2755 c. 6911 d. 7836

5. a. 4692 – 4000 + 600 + 90 + 2 b. 7324 – 7000 + 300 + 20 + 4
c. 8888 – 8000 + 800 + 80 + 8 d. 2349 – 2000 + 300 + 40 + 9

6. a. 6396 b. 67671 c. 89101 d. 5063 e. 48219

7. a. 4752 > 3494 b. 2437 > 2435 c. 1432 < 1826 d. 5232 < 5692

8. a.

		1	1	
	2	9	9	6
+	5	4	3	6
	7	4	3	2

b.

			1	
	3	4	9	2
+	4	2	6	9
	7	6	6	1

c.

	7	2	3	4
+	3	9	4	6
1	0	1	8	0

d.

	1	1		
	6	8	4	3
+	4	9	8	2
1	1	8	2	5

e.

	1	1	1	
	7	6	9	4
+	3	8	4	9
1	1	5	4	3

f.

	5	0	0	0
+	1	4	3	2
	6	4	3	2

9. a.

	2	5	3
×	4	3	
	5	0	6
1	0	1	2	0
1	0	6	2	6

b.

		8	5	6
×		3	4	6
		5	1	3	6
	3	4	2	4	0
2	5	6	8	0	0
2	9	6	1	7	6

c.

	8	3	2	0
			×	9
7	4	8	8	0

10. a.

7) 3469 (495
– 28
66
– 63
39
– 35
4

Q = 495
R = 4

b.

5) 525 (105
– 5
25
– 25
0

Q = 105
R = 0

c.

3) 7812 (2604
– 6
18
– 18
12
– 12
0

Q = 2604
R = 0

11. a. $\frac{1}{7}$, $\frac{1}{9}$ b. $\frac{23}{30}$, $\frac{17}{30}$ c. $\frac{2}{5}$, $\frac{3}{5}$

d. $\frac{19}{100}$, $\frac{78}{100}$ e. $\frac{10}{7}$, $\frac{10}{9}$ f. $\frac{11}{6}$, $\frac{11}{5}$

12. a. $\frac{8}{19} + \frac{3}{19} = \frac{8+3}{19} = \frac{11}{19}$ b. $\frac{24}{70} - \frac{17}{70} = \frac{24-17}{70} = \frac{7}{70}$ or $\frac{1}{10}$

c. $\frac{1}{3} - \frac{8}{3} = \frac{1-8}{3} = \frac{-7}{3}$ d. $\frac{143}{200} - \frac{43}{200} = \frac{143-43}{200} = \frac{100}{200}$ or $\frac{1}{2}$

13. a. 3 hrs = **3 × 60 = 180** minutes **(3 × 60 = 180 min)**

b. 7 hrs 30 mins = **7** hrs + **30** minutes **(7 × 60 + 30 = 420 + 30) 450** mins.

c. 12 hrs 40 mins = **12** hrs + **40** minutes **(12 × 6 + 40 = 720 + 40) 760** mins

d. 5 hrs 55 mins = **5** hrs + **55** minutes **(5 × 60 + 55 = 300 + 5) 355** mins

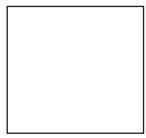
14. a. Quarter to 7 in the morning **6:45 AM.**

b. Number of days in the month of March **31 Days.**

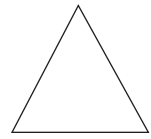
c. Number of days in a leap year **366.**

d. Standard unit of measuring weight **Kilogram.**

e. Distance between two towns is measured in **Kilometres.**

15. a. 

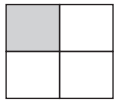
(i) This is a **square.**
(ii) It has **four** vertices.
(iii) It has **four** sides.

b. 

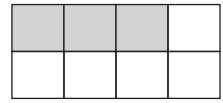
(i) This is a **triangle.**
(ii) It has **three** vertices.
(iii) It has **three** sides.

c. 

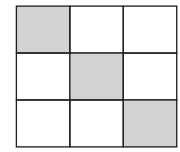
(i) This is a **rectangle.**
(ii) It has **four** vertices.
(iii) It has **four** sides.

16. a. 

$\frac{1}{4}$

b. 

$\frac{3}{8}$

c. 

$\frac{3}{9}$

17. a. $\frac{2}{5} = \frac{2\times2}{5\times2} = \frac{4}{10}$; $\frac{2\times3}{5\times3} = \frac{6}{15}$; $\frac{2\times4}{5\times4} = \frac{8}{20}$; $\frac{2\times5}{5\times5} = \frac{10}{25}$

b. $\frac{1}{6} = \frac{1\times2}{6\times2} = \frac{2}{12}$; $\frac{1\times3}{6\times3} = \frac{3}{18}$; $\frac{1\times4}{6\times4} = \frac{4}{24}$; $\frac{1\times5}{6\times5} = \frac{5}{30}$

c. $\frac{1}{4} = \frac{1\times2}{4\times2} = \frac{2}{8}$; $\frac{1\times3}{4\times3} = \frac{3}{12}$; $\frac{1\times4}{4\times4} = \frac{4}{16}$; $\frac{1\times5}{4\times5} = \frac{5}{20}$

d. $\frac{2}{7} = \frac{2\times2}{7\times2} = \frac{4}{14}$; $\frac{2\times3}{7\times3} = \frac{6}{21}$; $\frac{2\times4}{7\times4} = \frac{8}{28}$; $\frac{2\times5}{7\times5} = \frac{10}{35}$

e. $\frac{3}{8} = \frac{3\times2}{8\times2} = \frac{6}{16}$; $\frac{3\times3}{8\times3} = \frac{9}{24}$; $\frac{3\times4}{8\times4} = \frac{12}{32}$; $\frac{3\times5}{8\times5} = \frac{15}{40}$

18. a. Value of $\frac{3}{4}$ of a rupee

$= \frac{3}{4} \times 100\ P = 3 \times 25\ P$ ($\because$ ₹ 1 = 100 Paise)

b. Quantity of cake $= 6\frac{5}{7} = \frac{47}{7}$

Quantity of cake eaten $= 3\frac{2}{3} = \frac{11}{3}$

Cake left $= \frac{47}{7} - \frac{11}{3} = \frac{47\times3 - 7\times11}{21} = \frac{141 - 77}{21} = \frac{64}{21}$ or $3\frac{1}{21}$

c. Let required number = x

subtract x from $\frac{16}{21} = \frac{9}{21}$

$\frac{6}{21} - x = \frac{9}{21}$

$x = \frac{9}{21} - \frac{6}{21} = \frac{3-6}{21} = \frac{3}{21}$ or $\frac{1}{7}$

d. Cost of a shirt = ₹ 155
Cost of 8 shirts = ₹ 155 × 8 = ₹1240
Thus cost of 8 shirts is ₹ 1240

	₹	1	5	5
			×	8
₹	1	2	4	0

e. Earning in a month = ₹ 500 (1 year = 12 months)
Earning in 24 months = ₹ 500 × 24
= ₹ 12000
Thus, he earns ₹12000 in 2 years

		₹	5	0	0
			×	2	4
		2	0	0	0
	1	0	0	0	0
₹	1	2	0	0	0

f. Cost of an air ticket = ₹ 7585.95
Money given = ₹ 8000
Money received back = ₹ 8000 – 7585.95
= ₹ 414.05

	₹	8	0	0	0	.	0	0
–	₹	7	5	8	5	.	9	5
			4	1	4	.	0	5

g. Milk needed in one day = 27 *l* 500 ml
Milk needed in 7 days
(1 week = 7 days) = 27 *l* 500 ml × 7
= 192 *l* 500 ml
Thus 192 *l* 500 ml milk was used in each week.

l			ml	
2	7	5	0	0
			×	7
1	9	2	5	0

2 Numbering

Exercise 2.1

1. a. 3,26,148 b. 4,10,231 c. 3,06,750
d. 70,034 e. 5,21,071 f. 28,604

2. a. 6,70,562 = Six Lakh Seventy thousand five hundred sixty two.

b. 50,260 = Fifty thousand two hundred sixty.
c. 3,02,081 = Three lakh two thousand Eighty-one.

3. a. 60,000 = Sixty thousand
b. 4,608 = Four thousand six hundred eight.
c. 9,62,450 = Nine lakhs sixty-two thousand four hundred fifty.
d. 900,000 = Nine lakhs.
e. 50,000 = Fifty thousand.
f. 2,00,000 = Two lakhs.

4. a. 6,30,509 = 600000 + 30000 + 500 + 9
b. 3,02,065 = 300000 + 2000 + 0 + 5
c. 4,28,620 = 400000 + 20000 + 8000 + 600 + 20
d. 94,256 = 90000 + 400 + 200 + 5 + 6

5. a. Five lakhs forty thousand six hundred five. **5,40,605**
b. Two lakhs seven thousand eighty-six. **2,07,086**
c. Fifty-six thousand eight hundred seventy-one. **56871**
d. Forty thousand eight hundred sixty-three. **40,863**
e. Thirty thousand six hundred five. **30,605**

6. a. 6**8**385 = The place value of 8 is 8000.
b. 43**7**60 = The place value of 7 is 700.
c. **2**86312 = The place value of 2 is 20.
d. 34750**9** = The place value of 9 is 9.
e. 6**5**785 = The place value of 5 is 5000.

7. a. 5986 = = 5000 + **900** + **80** + 6.
b. The smallest 4-digit number is **1000.**
c. The difference between the smallest 2-digit number and the largest 1-digit number is **1. (The smallest 2-digit number = 10; the largest 1-digit number =9; difference = 10 – 9 = 1)**
d. 69324 = 6 × 10000 + **9** × 1000 + **3** + 100 × **2** × 10 + 4 × 1.
e, 20542 = **2** × 10000 + 0 × **1000** + 5 × **10** + **10** × 4 + **2** × 1.

8. a. (i) **6024** b. (i) **lakhs** c. (iii) **7557**
d. (iii) **22223** e. (iii) **5024**

Exercise 2.2

1. a. (7077), 7007 b. (98452), 97452 c. 30145, (31045)

2. a. 98745, 95487,(94578) b. (60600), 66000, 60606 c. 55005, 50500,(50050)

3. a. 3068 > 3009 b. 5834 > 979 c. 56705 < 58904
d. 543278 < 543642 e. 58908 > 58796 f. 7506 < 35764

4. a. 30003, 30303, 33003, 33300 b. 50845, 58045, 84054, 85405
c. 11021, 11111, 11211, 12111

5. a. 89064, 80000, 64098, 60489 b. 55555, 55505, 55055, 50555
c. 43043, 43034, 34043, 34034

6. a. 81880 > 18088 > 18008 b. 77770 > 77707 > 77007
c. 59802 > 58920 > 58902

7. a. 65096 < 65496 < 65649 b. 60006 < 60660 < 66600
c. 42424 < 44244 < 44422

8. a. The number is **641**

Th	H	T	O
	6	4	1

b. The number is **6230**

Th	H	T	O
6	2	3	0

Exercise 2.3

1. To from the greatest number from the given digits.

a. We arrange the digits (2,4,6,1,5) in descending order. According to this (ii) 65421 is the correct answer.

b. We arrange the digits (1,0,5) in ascending order. According to this (ii) 1005 is the correct answer.

c. We arrange the digits (1,2,3,4) in descending order. According to this (ii) 44321 is the correct answer.

2. a. 7, 6, 1 2

Largest number : Arranging the digits in descending order

We get $7 > 6 > 2 > 1$

Thus, largest number 7621

Smallest number : Arranging the digits in ascending order

We get $1 < 2 < 6 < 7$

Thus, smallest number 1267

b. 3, 5, 2, 7

Largest number : Arranging the digits in descending order

We get, $2 < 3 < 5 < 7$

Thus, largest number 7532.

Smallest number : Arranging the digits in ascending order

We get, $2 < 3 < 5 < 7$

Thus, smallest number 2357.

c, 7, 0, 4, 2

Largest number : Arranging the digits in descending oder.

We get, $7 > 4 > 2 > 0$

So, largest number = 7420

Smallest number : We put the numbers in ascending order. But as we do not beging a number from 0. We put it in the second place after the other smallest number that is 2.

Thus, We get 2, 0, 4 and 7 in the ascending order.

$\therefore$ Thus smallest number = 2047.

d. 0, 8, 2 1

Largest number : Arranging the digits in descending order

We get, $8 > 2 > 1 > 0$

So, largest number = 8210

Smallest number : We put the number in ascending order. But we do not beging a number from 0. We put it in the second place after the other smallest number that is 1.

Thus, We get 1, 0, 2 and 8 in ascending order

$\therefore$ Thus smallest number = 1028

e. 6, 4, 7

Largest number : We arrange the digits in descending order but as we have 3-digits, for making a 4-digit number we repeat the largest digit.

So, largest number = 7764

Smallest number : We arrange the digits in ascending order but as we have only 3-digits, you making a 4-digits number. We repeated smallest digit.

So the smallest number = 4467.

f. 1, 8, 2

Largest number : We arrange the digits in descending order but as we have only 3-digits, for making a 4-digit number, we repeated largest digit.
So, the largest number = 8821
Smallest number : We arrange the digits in ascending order but as we have only 3-digits, for making a 4-digit number, we repeated smallest digit.
So, the smallest number = 1182

g. 2,0,5

Largest number : We arrange the number in descending order. To make it 4-digits number, we repeat the biggest digit (5.)
$\therefore$ The largest number = 5520
Smallest number : We arrange the number in ascending order. As, we do not begin a number with 0. We put 2 in the first place and then put two 0s in middle followed by 5.
$\therefore$ The smallest number = 2005

h. 6, 5

Largest number : We arrange the digits in descending order but as we have only 2-digits, for making a 4-digit number, we repeated the largest digit three times
So, the largest number = 6665
Smallest number : We arrange digit in ascending order but we have only 2-digit for making a 4-digit number. We repeated smallest number three times.
So, the smallest number = 6555.

3. a. 4, 3, 2, 9, 8

Largest number : Arranging the digits in descending order
We get $9 > 8 > 4 > 3 > 2$
So, the largest number 98432
Smallest number : Arranging the digits in ascending order
We get $2 < 3 < 4 < 8 < 9$
So, the smallest number 23489

b. 1, 3, 5, 7, 9

Largest number : Arranging the digits in descending order
We get $9 > 7 > 5 > 3 > 1$
So, the largest number 97531
Smallest number : Arranging the digits in ascending order
We get $1 > 3 > 5 > 7 > 9$
So, the smallest number 13579

c. 9, 0, 5, 1, 4

Largest number : Arranging the digits in descending order
We get $9 > 5 > 4 > 1 > 0$
So, the largest number = 95410
Smallest number : Arranging the digits in ascending order and putting the smallest non-zero number before it, we get 1, 0, 4, 5, 9
So, the smallest number = 10459

d. 2, 0, 4, 6, 3

Largest number : Arranging the digits in descending order
We get, $6 > 4 > 3 > 2 > 0$
So, the largest number = 64320
Smallest number : Arranging the digits in ascending order and putting the smallest non-zero number before it.

We get, 2, 0, 3, 4, 6
So, the smallest number = 20346.

e. 3, 0, 4, 2, 1
Largest number : Arranging the digits in descending order
We get $4 > 3 > 2 > 1 > 0$
So, the largest number = 43210.
Smallest number : Arranging the digits in ascending order and putting the smallest.
We get 1, 0, 2, 3, 4
So, smallest number = 10234.

f. 7, 2, 1, 5
Largest number : We arrange the digits in descending order but as we have only 4-digit for making 5-digit number. We repeated largest digit.
The largest number 77521.
Smallest number : We arrange the digits in ascending order but as we have only 4-digit for making-5 digit number. We repeated smallest digit
The smallest number 11257.

g. 3, 7, 5, 1
Largest number : We arrange the digits in descending order but as we have only 4-digit for making 5-digit number. We repeated largest digit.
The largest number 77531.
Smallest number : We arrange the digits in ascending order but as we have only 4-digit for making 5-digit number. We repeated smallest digit.
The smallest number 11357.

h. 2, 0, 2, 2
Largest number : We arrange the digits in descending order but as we have only 4-digit for making 5-digit number we repeated largest digit.
The largest number = 22220
Smallest number : We arrange the digits in ascending order but as we have only 4-digit for making 5-digit number. We repeated smallest digit but 0 put in second place.
So, the smallest number = 20022.

4. a. The largest number formed using them will have **0** in the ones place.
b. If zero is placed in the T Th place, then the largest number formed will be **9765.**
c. If 9 comes in the ones place and 0 in the T Th place, then the smallest number formed will be **5679.**

Exercise 2.4

1. a. **316** = Digit at ones place is 6 ($6 > 5$)
So, we round off it to nearest 10
$\therefore$ 316 is rounded off to 320.

b. **224** = Digit at ones place is 4 ($4 < 5$)
So, we round off it to nearest 10
$\therefore$ 224 is rounded off to 220.

c. **349** = Digit at ones place is 9 ($9 > 5$)
So, we round off it to nearest 10
$\therefore$ 349 is rounded off to 350.

d. **3478** = Digit at ones place is 81 ($8 > 5$)
So, we round off it to nearest 10
$\therefore$ 3478 is rounded off to 3480.

2. a. **729** = Digit at tens place is 2 (2 > 5)
So, we round both the digit to 0 by keeping 7 unchanged.
729 is rounded off to 700.

b. **635** = Digit at tens place is 5 (3 < 5)
So, we round off it to nearest hundred
∴ 635 is rounded off to 600.

c. **759** = Digit at tens place is 5 (5 = 5)
So, we round off it to nearest hundred
∴ 759 is rounded off to 800.

d. **3660** = Digit at tens place is 6 (6 > 5)
So, we round off it to nearest hundred
∴ 3660 is rounded off to 3700.

3. a. **1190** = Digit at hundred place is 1 (1 < 5)
So, we round off it to nearest thousand
∴ 1190 is rounded off to 1000

b. **2480** = Digit at hundred place is 4 (4 < 5)
So, we round off it to nearest thousand
∴ 2480 is rounded off to 2000.

c. **3747** = Digit at hundred place is 7 (7 > 5)
So, we round off it to nearest thousand.
3747 is rounded off to 4000.

d. **4878** = Digit at hundred place is 8 (8 > 5)
So, we rounded off it nearest thousand
4878 is rounded off 5000.

4. a. 7 b. 35 c. 128 d. 1704
5. a. 28 b. 391 c. 2087 d. 7492
6. a. 405 b. 139 c. 4329 d. 2241
7. a. 6943 b. 1432 c. 2754 d. 27848

8. Number of children = 236
236 round off to nearest tens place
Digit at the one place is 6 (6 > 5)
236 is rounded off to 240.
240 children is the school (nearest ten)

9. Number of people = 14,569
14,569 round off to nearest hundred place
Digit at the tens place is 6 (6 > 5)
14,569 rounded off to 14,600
14,600 seats are in round.

Mental Gym

A. 1. c. 2. a. 3. a. 4. b.
5. The predecessor of 82,475 is **82,474**
The successor of 38,999 is **39,000**

B. 1. The place value of 7 in 17,268 is **7,000**
2. The place value of 4 in 4,28,186 is **4,00,000**
3. The expanded form of 38471 is **30000 + 8000 + 400 + 70 + 1**
4. The expanded form of 4,90,999 is **400000 + 90000 + 900 + 90 + 9**

HOTS

1. By repeating 2 we get the digits as follow 4, 2, 2, 0, 8
The greatest number formed from these digit = 84220
The smallest number formed from these digit = 20248
Now, the difference = 84220 – 20248
= 63972

	8	4	2	2	0
–	2	0	2	4	8
	6	3	9	7	2

2. The smallest 5-digit number = 10000
Smallest number with 9 at ones place = 10009
To read the same number as backward or forward we should 9 at the beginning
∴ The required number = 9009

3 Regional And Roman Numerals

Exercise 3.1

1. a. ৪১ b. ১৭ c. ৯০ d. ৩৬

2. a. **VIII** = 5 + 3 + 1 + 1 = 8 b. **XIX** = 10 + 9 = 19
c. **XXIV** = 10 + 10 + 4 = 24 d. **XXXXVIII** = 10 + 10 + 10 + 5 + 3 = 38

3. a. **21** = 10 + 10 + 1 = X + X + I = XXI
b. **7** = 5 + 2 = V + II = VII
c. **32** = 10 + 10 + 10 + 2 = X + X + X + II = XXXII
d. **16** = 10 + 5 + 1 = X + V + I = XVI
e. **11** = 10 + 1 = X + I = XI
f. **29** = 10 + 10 + 9 = X + X + IX = XXIX
g. **24** = 10 + 10 + 4 = XX + IV = XXIV
h. **36** = 10 + 10 + 10 + 5 + 1 = X + X + X + V + I = XXXVI
i. **38** = 10 + 10 + 10 + 5 + 3 = X + X + X + V + III = XXXVIII
j. **30** = 10 + 10 + 10 = X + X + X = XXX
k. **39** = 10 + 10 + 10 + 9 = X + X + X + IX = XXXIX
l. **26** = 10 + 10 + 5 + 1 = X + X + V + I = XXVI
m. **19** = 10 + (10 –1) = X + IX = XIX
n. **59** = 50 + (10 –1) = L + IX = LIX
o. **100** = M
p. **22** = 10 + 10 + 1 + 1 = X + X + I + I = XXII

4. a. IV < VII b. XXIX < XXXII c. XIX < XXII
d. XIII < XV e. XXVI > XIX f. XXVII < XX.

5. a. III + VI = **3 + 6 = 9** b. X + III = **10 + 3 = 13** c. VII + V = **7 + 5 = 12**
d. IV + II = **4 + 2 = 6** e. XXIX = **29** f. X + IV = **10 + 4 = 14**
g. IX + VI = **9 + 6 = 15** h. XXXV = **35** i. XX VII = **20 + 7 = 27**
j. LX = **60** k. LXXX = **80**

6. a. XIX b. XLIV c. XX
d. XXIX e. XLVIII f. XLI

7. a. XII b. XX c. XXIII d. XVII
e. XXV f. XXIX g. XXX h. XXVI

8. a. IV < VI < VII < IX b. XII < XIV < XIX < XXII
c. XXIV < XXV < XXIX < XXX d. XV < XVII < XX < XXII

9. a. XXIII > XXII > XX > XIX b. IX > VII > VI > V
c. LXII > L > XLII > XL d. LXIX > LXVII > LXV > LXI

10. a. IV + VI = **X**
4 + 6 = 10 b. L – XXIX = **XXI**
50 – 29 = 21
c. XI + IX = **XX** d. XX – XI = **IX**

11 + 9 = 20 **20 – 11 = 9**

11. a. 15 + 34 = **49** b. 28 – 21 = **7**
XXV + XXXIV = VIIX **XXVIII – XXI = VII**

c. 40 + 17 = **57** d. 63 – 43 = **20**
XL + XVII = LVII **LXIII – XLII = XX**

Have a Fun

	Class	Number	Corresponding Letter
(1)	Subtract I from L	XI – III = VIII	V
(2)	Divide O and I	IX ÷ III = III	I
(3)	Multiply I by I	III × III = IX	O
(4)	Add V and I	VIII × III = XI	L
(5)	Multiply N by T	V × II = X	E
(6)	Divide E by	X ÷ V = II	T
(7)	Subtract T from O	IX – II = VII	S
(8)	Add S and T	VII + II = IX	O
(9)	Subtract I from V	VIII – III = V	N
(10)	Subtract O from L	XI – IX = II	T
(11)	Add I to N	III + V = VIII	V
	Punch line	**V I O L E T S** **O N**	**T V**

4 Addition and Subtraction

Exercise 4.1

1. a.
$$\begin{array}{r} 36243 \\ +\ 42321 \\ \hline 78564 \end{array}$$
b.
$$\begin{array}{r} 32021 \\ +\ 47645 \\ \hline 79666 \end{array}$$
c.
$$\begin{array}{r} 38643 \\ +\ 60214 \\ \hline 98857 \end{array}$$
d.
$$\begin{array}{r} 28105 \\ +\ 51572 \\ \hline 79677 \end{array}$$

e.
$$\begin{array}{r} 33420 \\ 2356 \\ +\ 51002 \\ \hline 86778 \end{array}$$
f.
$$\begin{array}{r} 31215 \\ 135032 \\ +\ 120150 \\ \hline 286397 \end{array}$$
g.
$$\begin{array}{r} 412321 \\ 50475 \\ +\ 325102 \\ \hline 787898 \end{array}$$
h.
$$\begin{array}{r} 251642 \\ 524127 \\ +\ 14130 \\ \hline 989899 \end{array}$$

i.
$$\begin{array}{r} 523682 \\ +\ 302110 \\ \hline 825890 \end{array}$$
j.
$$\begin{array}{r} 721232 \\ +\ 472651 \\ \hline 1193883 \end{array}$$
k.
$$\begin{array}{r} 152751 \\ +\ 326045 \\ \hline 478796 \end{array}$$
l.
$$\begin{array}{r} 516259 \\ +\ 282640 \\ \hline 798899 \end{array}$$

2. a.
$$\begin{array}{r} 21340 \\ 30432 \\ +\ 18215 \\ \hline 69987 \end{array}$$
b.
$$\begin{array}{r} 123456 \\ 654321 \\ +\ 12012 \\ \hline 789789 \end{array}$$
c.
$$\begin{array}{r} 210413 \\ 143152 \\ +\ 45230 \\ \hline 398795 \end{array}$$
d.
$$\begin{array}{r} 103264 \\ 200513 \\ +\ 386101 \\ \hline 689878 \end{array}$$

e.
$$\begin{array}{r} 712345 \\ 214312 \\ +\ 111022 \\ \hline 1037679 \end{array}$$

f.
$$\begin{array}{r} 3456 \\ 23201 \\ +\ 361222 \\ \hline 387879 \end{array}$$

g.
$$\begin{array}{r} 43516 \\ 35281 \\ +\ 610202 \\ \hline 688999 \end{array}$$

h.
$$\begin{array}{r} 20160 \\ 135415 \\ +\ 32104 \\ \hline 187679 \end{array}$$

i.
$$\begin{array}{r} 513210 \\ 402301 \\ +\ 74365 \\ \hline 989876 \end{array}$$

j.
$$\begin{array}{r} 321014 \\ 234151 \\ +\ 142713 \\ \hline 697878 \end{array}$$

Exercise 4.2

1. a.
$$\begin{array}{r} {\scriptstyle 1\,1\ \ 1} \\ 136280 \\ +\ 194364 \\ \hline 330644 \end{array}$$

b.
$$\begin{array}{r} {\scriptstyle 1\,1\ \ 1} \\ 56709 \\ +\ 45689 \\ \hline 102398 \end{array}$$

c.
$$\begin{array}{r} {\scriptstyle 1\,1} \\ 64732 \\ +\ 29807 \\ \hline 94539 \end{array}$$

d.
$$\begin{array}{r} {\scriptstyle 1\ \ 1\,1} \\ 19274 \\ +\ 24348 \\ \hline 43622 \end{array}$$

e.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1\,1} \\ 425926 \\ +\ 194878 \\ \hline 620804 \end{array}$$

f.
$$\begin{array}{r} {\scriptstyle 1\,1\,1} \\ 345464 \\ +\ 232538 \\ \hline 578002 \end{array}$$

g.
$$\begin{array}{r} {\scriptstyle 1\,1\,1} \\ 425926 \\ +\ 342678 \\ \hline 768604 \end{array}$$

h.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1} \\ 348108 \\ +\ 236992 \\ \hline 585100 \end{array}$$

i.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1\,2} \\ 128507 \\ 282095 \\ +\ \ 84578 \\ \hline 495180 \end{array}$$

j.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1\,2} \\ 416348 \\ 184527 \\ +\ 305627 \\ \hline 906502 \end{array}$$

k.
$$\begin{array}{r} {\scriptstyle 1\,2\,2\,1\,1} \\ 648703 \\ 112499 \\ \ \ 28345 \\ +\ 216742 \\ \hline 1006289 \end{array}$$

l.
$$\begin{array}{r} {\scriptstyle 2\,1\,1\,1} \\ 518478 \\ 216324 \\ \ \ 15516 \\ +\ 324670 \\ \hline 1074988 \end{array}$$

2. a.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1\,1} \\ 2592569 \\ \ \ 18720 \\ +\ 32342 \\ \hline 2643631 \end{array}$$

b.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1} \\ 39271 \\ 156343 \\ +\ 97560 \\ \hline 293174 \end{array}$$

c.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1\,1} \\ 43785 \\ \ \ 15064 \\ +\ 1084743 \\ \hline 1143592 \end{array}$$

d.
$$\begin{array}{r} {\scriptstyle 1\ \ 2\,1} \\ 247895 \\ 100450 \\ +\ 270934 \\ \hline 619279 \end{array}$$

e.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,1\ \ 1} \\ \ \ 23124 \\ 1892435 \\ +\ 345724 \\ \hline 2261283 \end{array}$$

f.
$$\begin{array}{r} {\scriptstyle 1\ \ 1\ \ 1} \\ 311534 \\ 481207 \\ +\ 120743 \\ \hline 913484 \end{array}$$

g.
$$\begin{array}{r} {\scriptstyle 1\,1\,2\,1\,1} \\ 21640 \\ 34532 \\ 153246 \\ +\ 421635 \\ \hline 631053 \end{array}$$

h.
$$\begin{array}{r} {\scriptstyle 1\,2\,1\,1\,1} \\ 234541 \\ 416543 \\ 147315 \\ +\ 176193 \\ \hline 974592 \end{array}$$

i.
$$\begin{array}{r} {\scriptstyle 2\,2\,1\,1\,1} \\ 374425 \\ 236432 \\ 248217 \\ +\ 176193 \\ \hline 1035267 \end{array}$$

j.
$$\begin{array}{r} {\scriptstyle 1\,2\,1\,1\,1} \\ 437225 \\ 347232 \\ 347345 \\ +\ \ 65277 \\ \hline 1197079 \end{array}$$

3. a. 3472 + **1213** = 4685 **(4685 – 3472)**
b. **1** + 99,999 = 100,000 **(100,000 – 99,999)**
c. 49 + 221 + 36 = **36 + 49 + 221 = 306**
d. The successor of 85461 is **85462 (85461 + 1)**
e. The predecessor of 45126 is **45125 (45126 1)**

Exercise 4.3

1. 385454 + **0** = 385454
2. 56502 + 0 = **56502**
3. **1** + 56999 + 868302 = 56999 + 868302 + 1
4. 12369 + 35454 + 536464 = 35454 + **12369** + 536464
5. 69 + 221 = 36 = **326**
6. 436596 + **368989** = 368989 + 436596
7. 38234 + 42165 = **42165** + 38234
8. 0 + 580274 = **580274**
9. 8215 + 4362 = **12577**
10. 31573 + 26940 + 43208 = **43208** + **31573** + 26940
11. 4560 + **2690** = 7250 **(7250 – 4560)**
12. 913 + (762 + 632) = 632 + (913 + **762**)
13. **1036** + (723 + 2690) = (1036 + 723) + 2690
14. (1930 + 1437) + 2583 = (2583 + **1437**) + 1930
15. 36546 + 45886 = 45886 + **36546**

Exercise 4.4

1. Number of candidates passed = 35208
Number of candidates failed = 74623
Number of total candidates appeared = 35208 + 74623
= 109931
Thus 109931 candidates appeared for the examination.

					1
		3	5	2	0	8
+	7	4	6	2	3
1	0	9	8	3	1

2. Difference of two number = 43644
The smaller number = 136454
The bigger number = 43644 + 136454
= 180098

			1	1	
		4	3	6	4	4
+	1	3	6	4	5	4
	1	8	0	0	9	8

3. Number of votes polled in the first election = 95213
Number of votes polled in the second election = 95213 + 10314=10,5527
Total votes polled in the two elections = 95213 + 105527
= 200740 votes
Thus, 200740 votes polled.

	9	5	2	1	3
+	1	0	3	1	4
1	0	5	5	2	7

1	0	5	5	2	7
+	9	5	2	1	3
2	0	0	7	4	0

4. Quantity of milk sold in first month = 23515 *l*
Quantity of milk sold in second month = 18646 *l*
Quantity of milk sold in third month = 31336 *l*

Quantity of milk sold in fourth month = 28404 *l*

Quantity of total milk sold in four months = 23515 *l* + 18646 *l* + 31336 *l* + 28404 *l*

= 101901 *l*

	2	1	1	2
	2	3	5	1	5
	1	8	6	4	6
	3	1	3	3	6
+	2	8	4	0	4
1	0	1	9	0	1

Thus, 101901 *l* milk was sold in four months.

5. Number of bags of rice = 136442
Number of bags of wheat = 233456
Number of bas of dals = 42338
Number of total bags = 136442 + 233456 + 4238
= 412236

	1	1	1	1	1
	1	3	6	4	4	2
	2	3	3	4	5	6
+	4	2	3	3	8
4	1	2	2	3	6

Thus, 412236 bags stored in the godown.

6. Cost of a T.V. set = ₹ 21000
Cost of scooter = ₹ 35750
Total cost of T.V. and scooter = ₹ (21000 + 35750)
= ₹ 56750

	2	1	0	0	0
+	3	5	7	5	0
	5	6	7	5	0

Thus, total cost of TV and scooter is ₹ 56750.

7. Yearly Income in 1996 = ₹ 52960
Income in 1997 = ₹ 60525
Income in 1998 = ₹ 62376
Income in 1999 = ₹ 68345
Total income for the period 1996-1999
= ₹ (52960 + 60525 + 62376 + 68345)
= ₹ 244206

	1	2	2	1	
	5	2	9	6	0
	6	0	5	2	5
	6	2	3	7	6
+	6	8	3	4	5
2	4	4	2	0	6

8. Number of men = 238466
Number of women = 241588
Number of children = 108350
Total population = 238466 + 241588 + 108350
= 588404

	1	1	2	1	
	2	3	8	4	6	6
	2	4	1	5	8	8
+	1	0	8	3	5	0
5	8	8	4	0	4

9. Number of books in English = 36422
Number of books in Hindi = 47232
Number of books in other language = 48347
Number of total books in library
36422 + 47232 + 48347 = 132001
Thus, 132001 books in library.

	2	1	1	1	
	3	6	4	2	2
	4	7	2	3	2
+	4	8	3	4	7
1	3	2	0	0	1

10. Money deposited in a bank = ₹ 95723
Money deposited after 6 months = ₹ 800000
Total money deposited = ₹ (95723 + 800000)
= ₹ 895723

		9	5	7	2	3
+	8	0	0	0	0	0
	8	9	5	7	2	3

Thus, he deposit ₹ 895723 in the bank.

Exercise 4.5

1. a.
$$\begin{array}{r} 73595 \\ -\ 61234 \\ \hline 12361 \end{array}$$
b.
$$\begin{array}{r} 568388 \\ -\ 452324 \\ \hline 116064 \end{array}$$
c.
$$\begin{array}{r} 83295 \\ -\ 12074 \\ \hline 71221 \end{array}$$
d.
$$\begin{array}{r} 86314 \\ -\ 52103 \\ \hline 34211 \end{array}$$

e.
$$\begin{array}{r} 389634 \\ -\ 254521 \\ \hline 135113 \end{array}$$
f.
$$\begin{array}{r} 645070 \\ -\ 512030 \\ \hline 133040 \end{array}$$
g.
$$\begin{array}{r} 450767 \\ -\ 230413 \\ \hline 220354 \end{array}$$
h.
$$\begin{array}{r} 794856 \\ -\ 672423 \\ \hline 122433 \end{array}$$

i.
$$\begin{array}{r} 89075 \\ -\ 67034 \\ \hline 22041 \end{array}$$
j.
$$\begin{array}{r} 137543 \\ -\ 24012 \\ \hline 113531 \end{array}$$
k.
$$\begin{array}{r} 77845 \\ -\ 34320 \\ \hline 43525 \end{array}$$
l.
$$\begin{array}{r} 297564 \\ -\ 142212 \\ \hline 155352 \end{array}$$

2. a. 64532–43421
$$\begin{array}{r} 64532 \\ -\ 43421 \\ \hline 21111 \end{array}$$
b. 64679–63567
$$\begin{array}{r} 64679 \\ -\ 63567 \\ \hline 1112 \end{array}$$
c. 798686–34250
$$\begin{array}{r} 796686 \\ -\ 34250 \\ \hline 764436 \end{array}$$
d. 566438–36437
$$\begin{array}{r} 566438 \\ -\ 36437 \\ \hline 530001 \end{array}$$

e. 89575–54450
$$\begin{array}{r} 89575 \\ -\ 54450 \\ \hline 35125 \end{array}$$
f. 46787–36437
$$\begin{array}{r} 46787 \\ -\ 36437 \\ \hline 10350 \end{array}$$
g. 94860–54540
$$\begin{array}{r} 94860 \\ -\ 54540 \\ \hline 40320 \end{array}$$
h. 376928–154613
$$\begin{array}{r} 376928 \\ -\ 154613 \\ \hline 222315 \end{array}$$

i. 135753–24521
$$\begin{array}{r} 135753 \\ -\ 24521 \\ \hline 111232 \end{array}$$
j. 543782–321530
$$\begin{array}{r} 543782 \\ -\ 321530 \\ \hline 222252 \end{array}$$
k. 968497–854386
$$\begin{array}{r} 968497 \\ -\ 854386 \\ \hline 114111 \end{array}$$
l. 297564–42212
$$\begin{array}{r} 297564 \\ -\ 42212 \\ \hline 255352 \end{array}$$

3. a. **Working Rules :**

- 5 ones – 3 ones = 2 ones
- 6 hundreds – 4 hundreds = 2 hundreds
- 8 thousands – 6 thousands = 2 thousands
- 6 ten thousands–4 ten thousands = 2 ten thousands

$$\begin{array}{r} 6\ 8\ 6\ 4\ 5 \\ -\ ②\ 6\ ②\ 2\ ② \\ \hline 4\ ②\ 4\ 2\ 3 \end{array}$$

b. **Working Rules :**

- 2 ones + 1 ones = 3 ones
- 5 tens – 2 tens = 3 tens
- 2 hundreds + 3 hundreds = 5 hundreds
- 5 thousands – 4 thousands = 1 thousands
- 2 ten thousands + 5 ten thousands = 7 ten thousands
- 5 lakhs – 3 lakhs = 2 lakhs

$$\begin{array}{r} 5\ ⑦\ 5\ ⑤\ 5\ ③ \\ -\ 3\ 2\ ①\ 2\ ③\ 2 \\ \hline ②\ 5\ 4\ 3\ 2\ 1 \end{array}$$

c. **Working Rule :**

- 4 ones + 2 ones = 6 ones
- 5 tens – 3 tens = 2 tens
- 4 hundreds – 2 hundreds = 2 hundred
- 7 thousands – 5 thousands = 2 thousands
- 8 ten thousands – 8 ten thousands = 0 ten thousands
- 7 lakhs – 3 lakhs = 4 lakhs

7	8	7	4	5	⑥
– ④	8	5	②	3	4
3	⓪	②	2	②	2

d. **Working Rules :**

- 5 ones + 3 ones = 8 ones
- 9 tens – 3 tens = 6 tens
- 7 hundreds – 5 hundreds = 2 hundreds
- 7 thousands – 2 thousands = 5 thousands
- 4 ten thousands + 5 ten thousands = 9 ten thousands

⑨	7	7	9	⑧	
– 4	2	②	3	5	
5	⑤	5	⑥	3	

e. **Working Rules :**

- 3 ones + 1 ones = 4 ones
- 6 tens – 2 tens = 4 tens
- 5 hundreds – 3 hundreds = 2 hundreds
- 3 thousands + 4 thousands = 7 thousands
- 8 ten thousands – 4 ten thousands = 4 ten thousands
- 9 lakhs – 7 lakhs = 2 lakhs

9	8	⑦	5	6	④
– ②	4	3	②	2	3
7	④	4	3	④	1

f. **Working Rules :**

- 3 ones + 1 ones = 4 ones
- 4 hundreds – 3 hundreds = 1 hundred
- 5 thousands – 2 thousands = 3 thousands
- 4 ten thousands + 3 ten thousands = 7 thousands
- 6 lakhs – 4 lakhs = 2 lakhs

6	⑦	5	4	7	④
– ②	4	2	①	3	3
4	3	③	3	4	1

g. **Working Rules :**

- 3 ones + 2 ones = 5 ones
- 5 tens – 3 tens = 2 tens
- 4 hundreds – 2 hundreds = 2 hundreds
- 6 thousands – 4 thousands = 2 thousands
- 6 ten thousands + 2 ten thousands = 8 ten thousands
- 7 lakhs – 5 lakhs = 2 lakhs

7	⑧	6	4	5	⑤
– ②	6	②	2	②	3
5	2	4	②	3	2

h. **Working Rules :**

- 3 ones + 3 ones = 6 ones
- 4 tens – 2 tens = 2 tens
- 5 hundreds – 4 hundreds = 1 hundreds
- 3 thousands + 4 thousands = 7 thousands
- 7 ten thousands – 2 ten thousands = 5 ten thousands
- 6 lakhs – 5 lakhs = 1 lakhs

6	7	⑦	5	4	⑥
– 5	2	3	①	2	3
①	⑤	4	4	2	3

Exercise 4.6

1. a.

3	16			
~~4~~	~~6~~	7	9	8
– 2	7	4	5	2
1	9	3	4	6

b.

			9	
2	17	8	~~10~~	13
~~3~~	~~7~~	~~9~~	~~0~~	~~3~~
– 2	8	8	9	4
0	9	0	0	9

c.

8	12	1	15	
4	~~9~~	~~2~~	~~2~~	~~5~~
– 2	0	3	1	6
2	8	9	0	9

d.

7	14	4	14	
9	~~8~~	~~4~~	~~5~~	~~4~~
– 5	3	7	2	6
4	4	7	2	8

e.
		11		
	8	1	18	
6	8	9	2	8
– 3	4	5	4	9
3	4	3	7	9

f.
	13	12		
1	3	2	12	
2	4	3	2	9
– 1	5	7	6	8
0	8	5	6	1

g.
		12			
6	2	14	4	17	
7	3	4	5	7	
– 2	3	6	0	9	
4	9	8	4	8	

h.
5	15		3	12
6	5	9	4	2
– 2	8	4	0	8
3	7	5	3	4

i.
14	13	9	11		
4	4	3	10	1	10
5	5	4	0	2	0
– 3	5	6	7	9	5
1	9	7	2	2	5

j.
14	12	9	9		
4	2	10	10	15	
1	5	3	0	0	5
– 5	7	9	8	7	
9	5	0	1	8	

k.
	9			13	
2	10	18	6	3	11
3	0	8	7	4	1
– 2	9	4	6	7	
2	7	9	2	7	4

l.
		10	15			
4	0	5	17			
5	1	6	7	8	9	
– 2	4	7	8	7	9	
2	6	8	9	1	0	

2. a.
		10	16		
	8	0	6	13	
	8	9	1	7	3
–	5	4	8	7	5
	3	4	2	9	8

b.
		16	11		
	7	6	1	14	
9	8	7	2	4	
– 6	5	8	7	6	
3	2	8	4	8	

c.
		9	12	11		
	6	10	2	1	18	
7	0	3	2	8	9	
– 4	1	8	7	9	0	
2	8	4	4	9	9	

d.
		13	9		
	3	8	10	7	12
5	4	4	0	8	2
– 3	1	8	9	5	9
2	2	5	1	2	3

e.
		10	15		
	8	0	5	12	
9	1	6	2	7	
– 6	7	9	3	5	
2	3	6	9	2	

f.
		9	9	9	9	
4	10	10	10	10	10	
5	0	0	0	0	0	
– 3	6	3	4	7		
4	6	3	6	5	3	

3. a. **Working Rules :**

2 ones is less than 4 ones. Borrow 10 ones from tens.

2 ones + 10 ones = 12 ones

Now, 12 ones – 4 ones = 8 ones

5 hundreds – 2 hundreds = 3 hundreds

6 ten thousands – 3 ten thousands = 3 ten thousands

8	6	8	5	3	2
– 3	③	4	③	1	⑧
5	3	4	2	1	4

b. **Working Rules :**

- 6 ones < 7 ones borrow 1 tens.
- Tens remained = 4
- 4 tens – 2 tens = 2 tens
- 2 hundreds < 3 hundreds borrow one thousand hundreds
- Thousands remained = 3
- 3 thousands – 2 thousands = 1 thousand
- 8 lakhs – 6 lakhs = 2 lakhs

8	3	4	2	5	6
– ②	3	①	3	②	7
6	0	2	9	2	9

c. **Working Rules :**

- 4 tens + 5 tens = 9 tens.
- 6 thousands < 7 thousands
- So borrow 10 thousands
- As ten thousands digit is unknown we add 5 ten thousands + 2 ten thousands + 1 ten thousands (to be given to thousands)

∴ ten thousands : 5 + 2 + 1 = 8

9	⑧	⑥	⑨	5
– 7	5	7	4	5
2	2	9	5	0

d. **Working Rules :**

- 5 ones – 3 ones = 2 ones
- 6 thousands – 4 thousands = 2 thousands
- 8 ten thousands < 9 ten thousands borrow 10 lakhs
- lakhs remained = 6 lakhs
- 6 lakhs – 4 lakhs = 2 lakhs

7	8	6	9	0	5
– ②	9	④	4	3	②
4	9	2	4	7	3

e. **Working Rules :**

- 6 ones < 7 ones. Borrow 1 tens
- tens remained 4
  4 tens – 1 tens = 3 tens
- 5 hundreds < 8 hundreds
  We borrow 1 thousand or 10 hundreds.
  Thousands remained = 3 – 1 = 2 thousands.
  2 thousand – 1 thousand = 1 thousand
- 1 ten thousand < 7 ten thousands, we borrow 1 lakh or 10 ten thousands
  Lakh remained = 8 – 1 = 7

and 7 lakhs – 2 lakhs = 5 lakhs

8	1	3	5	5	6
– ⑤	7	①	8	③	7
2	4	1	7	1	9

f. **Working Rules :**

- 8 tens is less than 9 tens. Borrow 10 tens from hundreds
  8 tens + 10 tens = 18 tens
  Now, 18 – 9 = 9 tens
- Hundred remained = 3
  3 hundreds < 5 hundreds
  borrow one thousand or 10 hundreds.
- Thousand remained = 1
  1 thousand – 0 thousands = 1 thousands

2	5	2	4	8	6
– 1	7	①	5	⑨	4
	8	0	8	9	2

Exercise 4.7

1. Add of 30018 + 25981

	3	0	0	1	8
+	2	5	9	8	1
	5	5	9	9	9

Difference between 123420 – 55999

	11	12	13	11		
0	~~1~~	~~2~~	~~3~~	~~1~~	10	
~~1~~	~~2~~	~~3~~	~~4~~	~~2~~	~~0~~	
–	5	5	9	9	9	
	6	7	4	2	1	

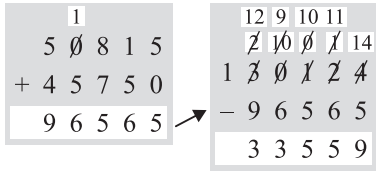
2. Difference of two numbers = 4095
The large number = 6200
The smaller number = 6200 – 4095
= 2105

		9		
	1	~~1~~	0	10
6	~~2~~	~~0~~	~~0~~	
– 4	0	9	5	
2	1	0	5	

3. The gross profit in 2001 = ₹ 6697085
The gross profit in 2002 = ₹ 8635592
Difference = ₹ 8635592 – 6697085
= ₹ 1938507
This, ₹ 1938507 more profit in 2002.

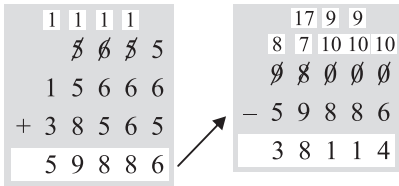
	15	12	14				
7	5	2	4	15	8	12	
~~8~~	~~6~~	~~3~~	~~5~~	~~5~~	~~9~~	~~2~~	
– 6	6	9	7	0	8	5	
1	9	3	8	5	0	7	

4. Number of eggs produced in a week = 130124
Number of eggs sent to one market = 50815
Number of eggs sent to another market = 45750
Number of eggs sent to third market = 130124 – (50815 + 45750)
= 130124 – 96565 = 33559



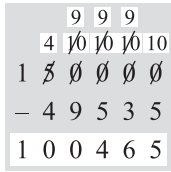
Thus, 33559 eggs sent to third market.

5. Total quantity of petrol in a petrol pump = 98000 *l*
Petrol sold on the first day = 5655 *l*
Petrol sold on the second day = 15666 *l*
Petrol sold on the third day = 38565 *l*
Total petrol sold = 5655 *l* + 15666 *l* + 38565 *l*
= 59886 *l*
Petrol left after third day = 98000 *l* – 59886 *l*
= 38114 *l*



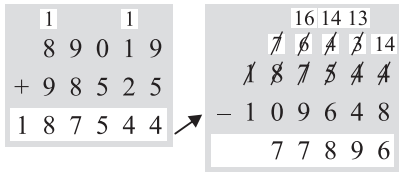
Thus, 38114 l petrol was left after the third day.

6. Let required number = x
According to question,
x + 49535 = 150000
x = 150000 – 49535 = 100465

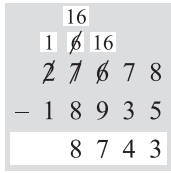


Thus, 100465 added to 49535 to 150000.

7. Sum of 89019 and 98525
89019 + 98525 = 187544
Subtract 109648 from 187544
187544 – 109648 = 77896
Thus 89019 + 98425 – 109648 equal to 77896.



8. Difference = 27678 – 18935 = 8743



9. Let required number = x
According to question,
x + 156580 = 526389
x = 526389 – 156580 = 369809
Thus, 36909 should be added to make it 526389.

			15			
	4	11	5	13		
	5	2	6	3	8	9
–	1	5	6	5	8	0
	3	6	9	8	0	9

10. Total population = 187639
Number of females = 50587
Number of males = 187639 – 50587 = 137052
Thus, 137052 males in the town.

				5	13	
1	8	7	6	3	9	
–	5	0	5	8	7	
1	3	7	0	5	2	

Mental Gym

1. b. 2. b. 3. c. 4. d.
5. d. 6. a. 7. b. 8. b.

HOTS

1.

	3	⑥	4	5	9
	②	2	6	⓪	4
+	1	3	⑤	2	①
	7	2	5	8	4

2.

	⑥	2	⓪	5	⑨	6
–	3	2	5	4	1	③
	2	⑨	5	①	8	3

Have a Fun

Solve the crossword :

Down ↓

b. 4284 + 1
c. successor of 99998
e. 587476 + 100000
g. 67777 + 10000
i 32547 + 564 = _____ +32547

Across →

a. 83457 + 0
d. 1 + 508
e. 62776 + 100
f. 534768 + 1
h. 455457 + 1000
j. 74770 + 10

ⓐ 8	3	ⓑ 4	5	4			ⓒ 9	
		2			ⓓ 5	0	9	
ⓔ 6	2	8	7	6			9	
8		ⓕ 0	0	0	ⓖ 7	6	9	
7					7		9	
ⓗ 4	5	6	4	ⓘ 5	7			
7				6	7			
6			ⓙ 7	4	7	8	0	

5 Multiplication

Exercise 5.1

1. a. 1 × 10 = **10**
b. 6 × 10 = **60**
c. 14 × 10 = **140**
d. 23 × 30 = **(23 × 3) × 10 = 69 × 10 = 690**
e. 27 × 50 = **(27 × 5) × 10 = 135 × 10 = 1350**
f. 35 × 80 = **(35 × 8) × 10 = 280 × 10 = 2800**
g. 48 × 10 = **480**
h. 55 × 60 = **(55 × 6) × 10 = 3300**
i. 1 × 100 = **100**
j. 4 × 900 = **(4 × 9) × 100 = 36 × 100 = 3600**

k. 19 × 100 = **1900**
l. 36 × 700 = **(36 × 7) × 100 = 252 × 100 = 25200**
m. 47 × 500 = **(47 × 5) × 100 = 235 × 100 = 23500**
n. 65 × 400 = **(65 × 4) × 100 = 260 × 100 = 26000**
o. 76 × 600 = **(76 × 6) × 100 = 456 × 100 = 45600**
p. 177 × 800 = **(177 × 8) × 100 = 1416 × 100 = 141600**
q. 1 × 1000 = **1000**
r. 3 × 1000 = **3000**
s. 60 × 1000 = **60000**
t. 75 × 9000 = **(75 × 9) × 1000 = 675 × 1000 = 675000**
u. 97 × 7000 = **(97 × 7) × 1000 = 679 × 1000 = 679000**
v. 188 × 5000 = **(188 × 5) × 1000 = 940 × 1000 = 940000**
w. 1785 × 800 = **(1785 × 8) × 100 = 14280 × 100 = 1428000**
x. 135 × 4000 = **(135 × 4) × 1000 = 540 × 100 = 540000**

2. a. 6 × **1000** = 6000 b. 9 × **100** = 900 c. 77 × **10** = 770
d. 199 × **100** = 19900 e. 165 × **10** = 1650 f. 57 × **100** = 5700
g. **7** × 1000 = 7000 h. **76** × 100 = 7600 i. **1757** × 10 = 17570

3. a. 27 × 0 = **0**
b. 4 × 5 = 5 × **4**
c. 75 × **1** = 75
d. **0** × 120 = 0
e. **4** × 65 = 64 × 4
f. (2 × 3) × 6 = 2 × (3 × **6**)
g. 8 × (15 × 4) = (**8** × 15) × 4
h. 70 × **1** = 70
i. 66 × **0** = 0
j. 50 × 40 = **200**
k. 0 × 2175 = **0**
l. 15 × 30 = **450**
m. 75 × **20** = 1500
n. 7 × **7000** = 49000
o. **4** × 25 = 100
p. 11 × **1100** = 12100
q. 5 × 4 × 6 = 6 × 4 × 5 = **12**
r. **8000** × 6 = 48000
s. **10** × 9 = 990
t. 5 × 100 = **500**

Exercise 5.2

Multiply :

1. 1268 × 3 = 3804
2. 1521 × 6 = 9126
3. 7027 × 4 = 28108
4. 3654 × 7 = 25578
5. 1227 × 4 = 4908
6. 7149 × 0 = 0
7. 6897 × 4 = 27588
8. 2340 × 8 = 18720
9. 5632 × 5 = 28160
10. 1709 × 4 = 6836
11. 1589 × 4 = 6356
12. 6197 × 8 = 49576
13. 5371 × 6 = 32226
14. 5907 × 7 = 41349
15. 6572 × 4 = 26288
16. 3594 × 6 = 21564

Exercise 5.3

1. a.

4917	
×35	
2485	
147510	
172095	

b.

2589	
×38	
20712	
77670	
98382	

c.

5261	
×63	
15783	
315660	
331443	

d.

2411	
×34	
9644	
72330	
81974	

e.

9187	
×88	
73496	
734960	
808456	

f.

1857	
×24	
7428	
37140	
44568	

g.

2014	
×27	
14098	
40280	
54378	

h.

9783	
×99	
88047	
880470	
968517	

i.

77492	
×91	
7492	
674280	
681772	

j.

2589	
×38	
20712	
77670	
98382	

k.

9783	
×97	
68481	
880470	
948951	

l.

6393	
×92	
12786	
575370	
588156	

2. a.

7451	
×241	
7451	
298040	
1490200	
1795691	

b.

1259	
×227	
8813	
25180	
251800	
285793	

c.

9807	
×194	
39228	
882630	
980700	
1902558	

d.

9783	
×299	
88047	
880470	
1956600	
2925117	

e.

6869	
×467	
48083	
412140	
2747600	
3207823	

f.

9674	
×282	
19348	
773920	
1934800	
2728068	

g.

8819	
×236	
52914	
264570	
1763800	
2081284	

h.

1976	
×287	
13832	
158080	
395200	
567112	

i.

6781	
×816	
40686	
67810	
5424800	
5533296	

j.

9687	
×504	
38748	
00000	
4843500	
4882248	

k.

8613	
×676	
51678	
602910	
5167800	
5822388	

l.

6738	
×287	
47166	
539040	
1347600	
1933806	

m.

	8976
×	492
	17952
	807840
	3590400
	4416192

n.

	5899
×	504
	23596
	00000
	2949500
	2973096

o.

	5698
×	367
	39886
	341880
	1709400
	2091166

p.

	1698
×	121
	1698
	33960
	169800
	205458

q.

	5723
×	169
	51507
	343380
	572300
	967187

r.

	2593
×	254
	10372
	129650
	518600
	658622

s.

	7698
×	215
	38490
	76980
	1539600
	1655070

t.

	5637
×	245
	28185
	225480
	1127400
	1381065

Exercise 5.4

1. Cost of a transistor set = ₹ 257
Number of transistor sets = ₹ 352
Cost of 352 transistor sets = ₹ 257 × 352
= ₹ 90464
Thus, cost of 352 transistor sets is ₹ 90464.

	257
×	352
	514
	12850
	77100
	90464

2. Number of balls in one carton = 145
Number of cartons = 1850
Number of total balls in cartons = 145 × 1850
= 268250
Thus, 268250 balls packet in 1850 cartons.

	1850
×	145
	9250
	74000
	185000
	268250

3. Number of sections in a library = 5
Number of books in each section = 250
Number of total books in 5 sections = 250 × 5
= 1250
Thus, these are 1250 books.

	250
×	5
	1250

4. Cost of a saree = ₹ 1950
Number of sarees = ₹ 379
Cost of 379 sarees = ₹ 1950 × 379
= ₹ 739050
Thus, cost of 379 sarees is ₹ 739050.

	1950
×	379
	17550
	136500
	585000
	739050

5. Price of 1 kg rice = ₹ 35
Price of 25 kg rice = ₹ (35 × 25)
= ₹ 875

	35
×	25
	175
	700
	875

6. Number of paper bags make in a day = 450
Number of working days = 365
Number of paper bags make in 365 days = 450 × 365
= 164250
Thus, Meena makes 164250 paper bags in.

```
  450
 ×365
 2250
27000
135000
164250
```

7. Number of apples packet in a box = 345
Number of boxes = 275
Number of total apples = 345 × 275
= 94875
Thus, 94875 apples contain is 275 boxes.

```
  345
 ×275
 1725
24150
69000
94875
```

8. Number of books an can hold almirah = 437
Number of almirah = 370
Number of book hold in 370 almirahs = 437 × 370
= 161690
Thus, 161690 books can hold in 370 almirahs.

```
  437
 ×370
    0
30590
131100
161690
```

9. Weight of wheat in a bag = 40 kg 370 g
Number of bags = 225
Weight of wheat in a bag = 40 kg 370 g × 225
= 9083 kg 25 g
Thus, 9083 kg 25 g wheat contain in 225 bags.

Kg	g
40	370
	×225
201	850
807	400
8074	000
9083	250

10. Cost of water cooler = ₹ 3817
Number of water cooler = 39
Cost of 39 water cooler = ₹ 3817 × 39
= ₹ 148863
Thus cost of 39 water coolers ₹ 148863.

```
  3817
 ×39
 34353
114510
148863
```

11. Monthly fees of each student = ₹ 2550
1 year = 12 months
Annual fee of student = ₹ 2550 × 12
= ₹ 30600

```
  2550
 ×12
  5100
 25500
330600
```

12. Weight of watermelon = 3458 g (∴ 1 kg = 1000 g)
Number of watermelon = (3458 × 24) g
= 82992 g
Thus weight of watermelon is 82992 gm or 82 kg 992 gm.

```
  3458
 ×24
 13832
 69160
 82992
```

Mental Gym

A. 1. b. 2. d. 3. b. 4. a.

B. 1. $214 \times 382 = \mathbf{382} \times 214$
2. $65 \times 0 \times 287 = \mathbf{0}$
3. $(28 \times 68) \times 38 = \mathbf{28} \times (68 \times 38)$
4. $9294 \times 1 = \mathbf{9294}$
5. $729 \times (11 + 4) = 729 \times \mathbf{11} + 729 \times \mathbf{4}$

HOTS

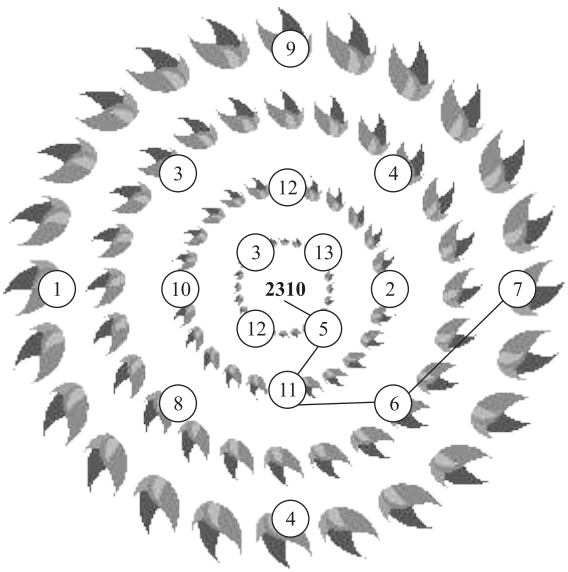
1.
		④	⑦	⑥ 5
				× 6
2	8	5	9	0

2.
		②	5	④ 7
				× 7
1	7	8	2	9

3.
		⑥	7 ⑨
			× 4
2	7	1	6

Have a Fun

Ans.



6 Division

Exercise 6.1

Note : •When dividing by 10 remove one zeros. • When dividing by 100 remove 2 zeros. • When dividing by 1000, remove 3 zeros.

1.
a. $300 \div 10 = \mathbf{30}$
b. $50 \div 10 = \mathbf{5}$
c. $5000 \div 10 = \mathbf{500}$
d. $400 \div 10 = \mathbf{40}$
e. $8000 \div 10 = \mathbf{800}$
f. $700 \div 100 = \mathbf{7}$
g. $600 \div 100 = \mathbf{6}$
h. $7000 \div 100 = \mathbf{70}$
i. $75000 \div 100 = \mathbf{750}$
j. $3500 \div 100 = \mathbf{35}$
k. $3000 \div 1000 = \mathbf{3}$
l. $6000 \div 1000 = \mathbf{6}$
m. $25000 \div 1000 = \mathbf{25}$
n. $140000 \div 1000 = \mathbf{140}$
o. $12000 \div 1000 = \mathbf{12}$

2. **(Note :** • When a non-zero number is divided by 10, we get quotient by removing ones digit. Remainder is formed by ones digit.
- When a non-zero number is divided by 100, we get quotient by removing ones and tens digits. Remainder is formed by ones and tens digits.
- When a non-zero number is divided by 1000, we get quotient by removing ones, tens, hundreds digits. Remainder is formed ones, ten, hundreds digits.)

a. $725 \div 10 = \mathbf{72}; \mathbf{5}$ b. $6005 \div 100$ **600**; **5**

c. 725 ÷ 10 = **72**; **5**
d. 624 ÷ 10 = **62**; **4**
e. 4965 ÷ 1000 = **4**; **965**
f. 14036 ÷ 1000 = **14**; **36**
g. 625 ÷ 100 = **6**; **25**
h. 385 ÷ 10 = 38; 5
i. 6948 ÷ 1000 = **6**; **948**
j. 7250 ÷ 100 = **72**; **50**
k. 12345 ÷ 1000 = **12**; **345**
l. 13697 ÷ 10 = **1369**; **7**
m. 15926 ÷ 1000 = **15**; **926**
n. 6395 ÷ 1000 = **6**; **395**
o. 1346 ÷ 100 = **13**; **46**
p. 72576 ÷ 100 = **725**; **76**

3. a. 0 ÷ 16 = **0**
b. **0** ÷ 100 = 0
c. **15** ÷ 1 = 15
d. 500 ÷ 100 = **5**
e. 36 ÷ 36 = **1**
f. 72 ÷ **72** = 1
g. 60 ÷ 10 = **6**
h. **7000** ÷ 1000 = 7
i. 45 ÷ 1 = **45**
j. 88 ÷ **1** = 88
k. 80 ÷ 10 = **8**
l. **90** ÷ 10 = 9

4. The remainder is less than the **divisor.**

5. The quotient is zero if the **dividend** is zero.

6. The quotient and dividend are equal when the divisor is **1.**

7. Division is repeated **Subtraction.**

8. Divisor × Quotient + Remainder = **dividend.**

9. Dividing into equal group is **divisor.**

Exercise 6.2

1.
```
7) 6146 (878
 – 56
  54
 – 49
   56
 – 56
    0
```
Quotient = 878,
Remainder = 0

2.
```
3) 5868 (1956
 – 3
  28
 – 27
   16
 – 15
    18
 – 18
     0
```
Quotient = 1956,
Remainder = 0

3.
```
4) 5786 (1446
 – 4
  17
 – 16
   18
 – 16
    26
 – 24
     2
```
Quotient = 1446,
Remainder = 2

4.
```
6) 8954 (1492
 – 6
  29
 – 24
   55
 – 54
    14
 – 12
     2
```
Quotient = 1492,
Remainder = 2

5.
```
8) 9853 (1231
 – 8
  18
 – 16
   25
 – 24
    13
 – 8
     5
```
Quotient = 1231,
Remainder = 5

6.
```
9) 5864 (651
 – 54
  46
 – 45
    14
 – 9
     5
```
Quotient = 651,
Remainder = 5

7.

```
4) 9587 (2396
 – 8
  15
 – 12
  38
 – 36
  27
 – 24
   3
```

Quotient = 2396,
Remainder = 3

8.

```
2) 2153 (1076
 – 2
  15
 – 14
  13
 – 12
   1
```

Quotient = 1076,
Remainder = 1

9.

```
2) 4046 (2023
 – 4
  04
 – 04
  06
 – 06
   0
```

Quotient = 2023,
Remainder = 0

10.

```
8) 8048 (1006
 – 8
  48
 – 48
   0
```

Quotient = 1006,
Remainder = 0

11.

```
9) 5692 (632
 – 54
  29
 – 27
  22
 – 18
   4
```

Quotient = 632,
Remainder = 4

12.

```
4) 4970 (1242
 – 4
  9
 – 8
  17
 – 16
  10
  – 8
   2
```

Quotient = 1242,
Remainder = 2

13.

```
8) 3649 (456
 – 32
  44
 – 40
  49
 – 48
   1
```

Quotient = 456,
Remainder = 1

14.

```
7) 8506 (1215
 – 7
  15
 – 14
  10
 – 7
  36
 – 35
   1
```

Quotient = 1215,
Remainder = 1

15.

```
5) 4189 (837
 – 40
  18
 – 15
  39
 – 35
   4
```

Quotient = 837,
Remainder = 4

16.
```
7) 3538 (505
 – 35
 ----
   38
 – 35
 ----
    3
```
Quotient = 505,
Remainder = 3

17.
```
4) 8880 (2220
 – 8
 ---
  08
 – 08
 ---
  08
 – 08
 ---
  00
```
Quotient = 2220,
Remainder = 0

18.
```
6) 5107 (851
 – 48
 ----
   30
 – 30
 ----
   07
  – 6
 ----
    0
```
Quotient = 851,
Remainder = 1

19.
```
7) 5909 (844
 – 56
 ----
   30
 – 28
 ----
   29
 – 28
 ----
    1
```
Quotient = 844,
Remainder = 1

20.
```
5) 1096 (219
 – 10
 ---
  09
 – 05
 ---
  46
 – 45
 ---
   1
```
Quotient = 219
Remainder = 1

Exercise 6.3

1. a.
```
13) 9578 (736
 – 91
 ----
   47
 – 39
 ----
   88
 – 78
 ----
   10
```
Quotient = 736,
Remainder = 10

b.
```
19) 9205 (484
 – 76
 ----
  160
 – 152
 -----
   85
 – 76
 ----
    9
```
Quotient = 484,
Remainder = 9

c.
```
17) 4635 (272
 – 34
 ----
  123
 – 119
 -----
   45
 – 34
 ----
   11
```
Quotient = 272,
Remainder = 11

d.
```
28) 37604 (1343
 – 28
 ----
   96
 – 84
 ----
  120
 – 112
 -----
   84
  – 84
 -----
    0
```

e.
```
42) 5479 (130
 – 42
 ----
  127
 – 126
 -----
   19
  – 0
 ----
   19
```

f.
```
63) 6286 (99
 – 567
 -----
   616
 – 567
 -----
    49
```

Quotient = 1343,
Remainder = 0

g.

```
45) 9627 (213
  - 90
  ----
    62
  - 45
  ----
   177
  - 135
  -----
    42
```

Quotient = 130,
Remainder = 19

h.

```
12) 7638 (636
  - 72
  ----
    43
  - 36
  ----
    78
  - 72
  ----
     6
```

Quotient = 99,
Remainder = 49

i.

```
12) 1176 (98
  - 108
  -----
     96
  - 96
  ----
      0
```

Quotient = 213,
Remainder = 42

j.

```
36) 2775 (77
  - 252
  -----
    255
  - 252
  -----
      3
```

Quotient = 636,
Remainder = 6

k.

```
61) 5739 (94
  - 549
  -----
    249
  - 244
  -----
      5
```

Quotient = 98,
Remainder = 0

l.

```
17) 1074 (63
  - 102
  -----
     54
  - 51
  ----
      3
```

Quotient = 77,
Remainder = 3

m.

```
46) 3778 (82
  - 368
  -----
     98
  - 92
  ----
      6
```

Quotient = 88,
Remainder = 38

n.

```
45) 3998 (88
  - 360
  -----
    398
  - 360
  -----
     38
```

Quotient = 46,
Remainder = 0

o.

```
21) 966 (46
  - 84
  ----
   126
  - 126
  -----
      0
```

Quotient = 82,
Remainder = 6

p.

```
46) 3359 (73
  - 322
  -----
    139
  - 138
  -----
      1
```

Quotient = 73,
Remainder = 1

q.

```
46) 3359 (73
  - 322
  -----
    139
  - 138
  -----
      1
```

Quotient = 73,
Remainder = 1

r.

```
77) 9185 (119
  - 77
  ----
   148
  - 77
  ----
    715
  - 693
  -----
     22
```

Quotient = 119,
Remainder = 22

s.

```
56) 6783 (121
  – 56
  ----
   118
  – 112
  ----
    63
   – 56
  ----
     7
  ----
```

Quotient = 121, Remainder = 7

t.

```
23) 2852 (124
  – 23
  ----
    55
  – 46
  ----
    92
  – 92
  ----
     0
  ----
```

Quotient = 124, Remainder = 0

2. a. **Divide : 3745 by 10**
There are 1 zero in divisor
Quotient = 374, Remainder = 5

b. **Divide : 6532 by 100**
There are 2 zero in divisor
Quotient = 65, Remainder = 32

c. **Divide : 8719 by 1000**
There are 3 zero in divisor
Quotient = 8, Remainder = 719

d. **Divide : 7120 by 10**
There are 1 zero in divisor
Quotient = 719, Remainder = 0

e. **Divide : 8420 by 100**
There are 2 zero in divisor
Quotient = 84, Remainder = 20

f. **Divide : 9500 by 1000**
There are 3 zero in divisor
Quotient = 9, Remainder = 500

g. **Divide : 12860 by 100**
There are 2 zero in divisor
Quotient = 128, Remainder = 60

h. **Divide : 23167 by 100**
There are 2 zero in divisor
Quotient = 231, Remainder = 67

i. **Divide : 11080 by 100**
Quotient = 110, Remainder = 80

j. **Divide : 10500 by 1000**
Quotient = 10, Remainder = 500

k. **Divide : 2369 by 7**

```
7) 2369 (338
 – 21
 ----
   26
 – 21
 ----
    59
  – 56
 ----
     3
 ----
```

Quotient = 338, Remainder = 3

l. **Divide : 7926 by 12**

```
12) 7926 (660
  – 72
  ----
    72
  – 72
  ----
     6
   – 0
  ----
     6
  ----
```

Quotient = 660, Remainder = 6

m. **Divide : 6912 by 14**

```
14) 6912 (493
  – 56
  ----
   131
  – 126
  ----
    52
   – 42
  ----
    10
  ----
```

Quotient = 493, Remainder = 10

n. **Divide : 4093 by 13**

```
13) 4093 (314
  – 39
  ----
    19
  – 13
  ----
    63
   – 52
  ----
    11
  ----
```

Quotient = 314, Remainder = 11

o. **Divide : 6235 by 15**

```
15) 6235 (415
   – 60
   ----
     23
   – 15
   ----
     85
   – 75
   ----
     10
   ----
```

Quotient = 415, Remainder = 10

p. **Divide : 9314 by 19**

```
19) 9314 (490
   – 76
   ----
   – 171
   – 171
   ----
     – 04
     – 00
     ----
        4
```

Quotient = 490, Remainder = 4

q. **Divide : 5938 by 27**

```
27) 5938 (219
   – 54
   ----
     53
   – 27
   ----
     268
   – 243
   -----
      25
```

Quotient = 219, Remainder = 25

r. **Divide : 6314 by 11**

```
11) 6314 (574
   – 55
   ----
     81
   – 77
   ----
      44
   – 44
   ----
      0
```

Quotient = 574, Remainder = 0

s. **Divide : 7425 by 32**

```
32) 7425 (232
   – 64
   ----
    102
   – 96
   ----
     65
   – 64
   ----
      1
```

Quotient = 232, Remainder = 1

t. **Divide : 8164 by 29**

```
29) 8164 (281
   – 58
   ----
    236
   – 232
   -----
      44
   – 29
   ----
      15
```

Quotient = 281, Remainder = 15

Exercise 6.4

1. Number of boxes that can be in 1 truck = 48
Number of boxes to be loaded = 6000
Number of trucks required = 6000 ÷ 48
= 125

Thus 125 trucks are required to loaded 6000 boxes.

```
48) 6000 (125
   – 48
   ----
    120
   – 96
   ----
     240
   – 240
   -----
       0
```

2. Strength of one bus = 52 people
Total number of people = 7800
Number of buses required = 7800 ÷ 52 = 150
∴ 150 buses are required for 7800 people to travel.

```
52) 7800 (150
  - 52
  ----
    260
  - 260
  ----
      0
  ----
```

3. First we divide 4848 by 46
Quotient = 105, Remainder = 18
18 subtracted from 4848
We get 4848 – 18 = 4830
Thus, 4830 is divisible by 46.

```
46) 4848 (105
  - 46
  ----
    248
  - 230
  ----
     18
  ----
```

4. Number of sweets = 162
Number of children = 32
Number of sweets received by each child = 162 ÷ 32
Quotient = 5, Remainder = 2
Thus, 5 sweets received by each child and 2 sweets were left with him.

```
32) 162 (5
  - 160
  -----
      2
  -----
```

5. Number of children = 1620
Number of room = 36
Number of children seat in each room = 1620 ÷ 36
= 45
Thus 45 children seat in each room.

```
36) 1620 (45
  - 144
  -----
    180
  - 180
  -----
      0
  -----
```

6. Number of roses to be packed = 7245
Number of crates packed = 9
Number of roses packed in each crate = 7245 ÷ 9
= 805
Thus, 805 roses were packed in each crate.

```
9) 7245 (805
  - 72
  ----
    45
  - 45
  ----
     0
  ----
```

7. Total Quantity of rice = 3672 kg
Number of army paliols = 8
Rice received by each army paliol = 3672 ÷ 8
= 459 kg
Thus, each army paliol received 459 kg of rice.

```
8) 3672 (459
  - 32
  ----
    47
  - 40
  ----
    72
  - 72
  ----
     0
  ----
```

8. Cost of 2 dozen eggs or 24 eggs = ₹ 24
Cost of 1 egg = ₹ (24 ÷ 24)
= ₹ 1
Thus cost of 1 egg is ₹ 1.

```
24) 24 (1
  - 24
  ----
     0
  ----
```

9. Distance covered to 8 litres = 144 km
Distance covered to 1 litre = (144 ÷ 8) km
= 18 km
Thus, 18 km distance covered in 1 litre.

```
8) 144 (18
 - 8
----
  64
 - 64
----
   0
----
```

10. Number of bags loaded in 15 trucks = 2265
Number of bags loaded in 1 truck = 2265 ÷ 15
= 151
Thus, 151 bags loaded in 1 truck.

```
15) 2265 (151
 - 15
-----
   76
 - 75
-----
    15
 - 15
-----
     0
-----
```

11. Cost of each ticket = ₹ 25
Total collection collected = ₹ 8125
Number of ticket sold = (8125 ÷ 25)
= 325
Thus, 325 tickets were sold.

```
25) 8125 (325
 - 75
-----
   62
 - 50
-----
   125
 - 125
-----
     0
-----
```

12. Cost of 39 radios = ₹ 9750
Cost of 1 radio = ₹ 9750 ÷ 39
= ₹ 250
Cost of 20 radios = ₹ 250 × 20
= ₹ 5000
Thus, the cost of 20 radios is ₹ 5000.

```
39) 9750 (250
 - 78
-----
  195
 - 195
-----
    0
-----
```

```
  2 5 0
  × 2 0
-------
  0 0 0
5 0 0 0
-------
5 0 0 0
-------
```

13. Weight of 45 persons = 2700 kg
Weight of 1 person = 2700 ÷ 45
= 60
Thus, the weight of 1 person is ₹ 60 kg.

```
45) 2700 (60
 - 270
-----
   00
-----
```

14. Number of pencils = 7340
Number of pencils in each packet = 5
Number of packet = 7340 ÷ 5
= 1468
Thus Shalini buy 1468 packets.

```
5) 7340 (1468
 - 5
-----
  23
 - 20
-----
  34
 - 30
-----
  40
 - 40
-----
   0
-----
```

15. Cost of 35 tables = ₹ 17500
Cost of 1 table = ₹ 17500 ÷ 35
= ₹ 500
Thus, cost of 1 table is ₹ 500.

```
35) 1750 (500
 - 175
-----
   00
-----
```

16. Number of people = 630
Number of people sit in a bus = 15
Number of buses needed = 630 ÷ 15
= 42
Thus, 42 buses needed.

```
15) 630 (42
  - 60
  ----
    30
  - 30
  ----
     0
```

17. Length of the roll of ribbon = 1,111 metres
Length of each piece to be cut = 11 metres
Number of pieces can be made = 1,111 ÷ 11 metres
= 101
Thus, from the given roll, 101 pieces can be made.

```
11) 1111 (101
  - 11
  ----
    - 11
    ----
    - 11
    ----
       0
```

Mental Gym

1. a. 2. b. 3. c. 4. a.
5. d. 6. a. 7. a. 8. d.

HOTS

1. The largest 5-digit number = 99999
Here, Quotient = 7142, Remainder = 11
Required Number = 99999 – 11
= 99988
99988 is divisible by 14 = 99988.

```
14) 99999 (7142
  - 98
  ----
    19
  - 14
  ----
    59
  - 56
  ----
    39
  - 28
  ----
    11
```

2. Here, Divisor = x
Quotient = 7. Dividend = 50. Remainder = 1
We know that, Dividend = Divisor × Quotient + Remainder
50 = x × 7 + 1
50 – 1 = 7x
49 = 7x
49 ÷ 7 = x
7 = x
Divisor = 7

Have a Fun

a.  ×  = 

 = 2

2 × 4 = 8

 = 4

b.  ×  = 

 = 8

4 × 4 = 8

c.  –  = 

8 – 4 = 2 + 2

d.  ÷  = 

8 ÷ 4 = 2

Mango has the greatest value and apple has the smallest value.

7 Unitary Method

Exercise 7.1

1. Price of pencils = ₹ 24 (1 dozen = 12)
Price of 1 pencil = ₹ 24 ÷ 12 = ₹ 2

2. Distance covered in 5 hours = 200 km
Distance covered in 1 hour = 200 ÷ 5 = 40 km

3. Cost of 5 watches = ₹ 3500
Cost of 1 watch = ₹ 3500 ÷ 5 = ₹ 700

4. Oil used in 25 days = 200 *l*
Oil used in 1 day = (200 ÷ 25) *l* = 8 *l*

5. Price of 100 kg sugar = ₹ 900
Price of 1 kg sugar = ₹ 900 ÷ 100 = ₹ 9

6. Rice consumed in 7 days = 42 kg (1 week = 7 days)
Rice consumed in 1 day = 42 ÷ 7 = 6 kg

7. Cost of 12 notebooks = ₹ 48 (1 dozen = 12)
Cost of 1 notebook = ₹ 48 ÷ 12 = ₹ 4

8. Rice eaten by a man = 800 gm
Rice eaten by 5 men = 800 × 5 gm (1 kg = 100 gm)
= 4000 gm or 4 kg

9. Cost of one doll = ₹ 500
Cost of 6 dolls = ₹ 500 × 6 = ₹ 3000

10. Cost of one chair = ₹ 175
Cost of 5 chairs = ₹ 175 × 5 = ₹ 875

11. Cost of 1 rubber = ₹ 3.50
Cost of 7 rubbers = ₹ 3.50 × 7 = ₹ 24.5

12. Wall painted in one box = 15 m
Wall painted in 9 boxes = 15 × 9 = 135 m

13. Number of pages in one box = 80 pages
Number of pages in 15 boxes = 80 × 15 = 1200 pages

14. Cost of one table = ₹ 350
Cost of 6 tables = ₹ 350 × 6 = ₹ 2100

15. Price of 100 kg sugar = ₹ 900
Price of 1 kg sugar = ₹ 900 ÷ 100 = ₹ 9
Price of 5 kg sugar = ₹ 9 × 5 = ₹ 45

Exercise 7.2

1. Cost of 7 umbrellas = ₹ 350
Cost of 1 umbrella = ₹ 350 ÷ 7 = ₹ 50
Cost of 4 umbrellas = ₹ 50 × 4 = ₹200
Hence, cost of 4 umbrellas is ₹ 200.

```
7) 350 (50
 - 35
 ----
   00
 ----
```

```
  5 0
× 4
-----
2 0 0
```

2. Fare of 6 persons = ₹ 900
Fare of 1 person = ₹ 900 ÷ 6
= ₹ 150
Fare of 4 persons = ₹ 600

```
6) 900 (150
 - 6
 ----
  30
 - 30
 ----
   0
 ----
```

```
  1 5 0
×     4
-------
  6 0 0
```

3. Number of pencils in 5 packets = 60
Number of pencils in 1 packet = 60 ÷ 5
= 12
Number of pencils in 3 packets = 12 × 3
= 36
Thus, there are 36 pencils in 3 packets.

```
5) 60 (12
 - 5
 ----
  10
 - 10
 ----
   0
 ----
```

```
  1 2
×   3
-----
  3 6
```

4. Number of apples in 12 boxes = 1500
Number of apples in 1 box = 1500 ÷ 12
= 125
Number of apples in 1000 boxes = 125 × 1000
= 125000
Thus, there are 125000 apples in 1000 boxes.

```
12) 1500 (125
 - 12
 ----
  30
 - 24
 ----
  60
 - 60
 ----
   0
 ----
```

5. Rent of a house 12 months = ₹ 7200
Rent of a house 12 month = ₹ 7200 ÷ 12
= ₹ 600
Rent of a house 6 month = ₹ 600 × 6
= ₹ 3600
Thus, rent of a house 6 months is ₹ 3600.

```
12) 7200 (600
 - 72
 ----
  000
 ----
```

```
  6 0 0
×     6
-------
3 6 0 0
```

6. Number of times a frog leaps in 13 minutes = 169
Number of times a frog leaps in 1 minute = 169 ÷ 13
= 13 times
Number of times a frog leaps = 11 × 13 = 143 times

```
13) 169 (13
 - 13
 ----
  39
 - 39
 ----
   0
 ----
```

```
  1 3
× 1 1
-------
  1 3
1 3 0
-------
1 4 3
```

7. Number of bags carry in 15 trucks = 3000
Number of bags carry in 1 truck = 3000 ÷ 15
= 200
Number of bags carry in 8 trucks = 200 × 8
= 1600

Thus, 1600 bags of race put in 8 trucks.

15) 3000 (200
– 30
000

2 0 0
× 8
1 6 0 0

8. Cost of 3 pizzas = ₹ 39.60
Cost of 1 pizza = ₹ 39.60 ÷ 3
= ₹ 13.20
Cost of 8 pizzas = ₹ 13.20 × 8
= ₹ 105.6

Thus, the cost of 8 pizzas is ₹ 105.6

3) 3960 (1320
– 3
09
– 09
06
– 06
0

1 3 2 0
× 8
1 0 5 6 0

9. School fees for 4 months = ₹ 1680 (1 year = 12 months)
School fees for 1 month = ₹ 1680 ÷ 4
= ₹ 420
School fees in for 1 year or 12 months = ₹ 420 × 12
= ₹ 5040

Thus, school fee for the whole year is ₹ 5040.

4) 1680 (420
– 16
08
– 8
00

4 2 0
× 1 2
8 4 0
4 2 0 0
5 0 4 0

10. Number of distributed toffees = 180
Number of children = 45
Number of toffees received by each child = 4
distributed = 180 ÷ 45
Number of toffees 20 children = 20 × 4
= 80

Thus, 80 toffees were given to 20 children.

45) 180 (4
– 180
0

2 0
× 4
8 0

11. Price of 8 litres of milk = ₹ 48
Price of 1 litres of milk = ₹ 48 ÷ 8 = ₹ 6
Price of 10 litres of milk = ₹ 6 × 10 = ₹ 60
Thus the price of 10 litres of milk is ₹ 60.

8) 48 (6
– 48
0

1 6
× 8
6 0

12. Number of pots made in 250 hrs = 500
Number of pots made in 1 hr = 500 ÷ 250
= 2
Number of pots made in 105 hrs = 105 × 2
= 210

Thus 210 pots were made in 105 hrs.

250) 500 (2
– 500
0

1 0 5
× 2
2 1 0

13. Cost of 50 copies of book = ₹ 750
Cost of 1 copy of books = ₹ 750 ÷ 50
= 15
Cost of 200 copies of books = 15 × 200
= 3000
Thus, cost of 200 copies is ₹ 3000.

```
50) 750 (15
   - 50
   ----
    250
    250
   ----
      0
   ----
```

```
  2 0 0
  × 1 5
-------
  1 0 0 0
  2 0 0 0
  3 0 0 0
```

14. Time taken to cover 240 km = 4 hrs
Distance covered in 1 hr = 240 ÷ 4
= 60 km
∴ Bus takes 1 hr to cover 60 km
∴ To cover 420 km, bus will take = 420 ÷ 60 = 7 hrs

```
4) 240 (60
  - 240
  -----
      0
  -----
```

```
60) 420 (7
  - 420
  -----
      0
  -----
```

15. Distance covered in 15 hrs = 900 km
Distance covered in 1 hr = 900 ÷ 15
= 60 km
Distance covered in 24 hrs = 60 × 24 km
= 1440 km
Thus, Bus 144 km covered in 24 hrs.

```
15) 900 (60
  - 90
  ----
     0
  ----
```

```
  6 0
  × 2 4
-------
  2 4 0
  1 2 0 0
  1 4 4 0
```

16. Cost of 5 metres of cloth = ₹ 125
Cost of 1 metres of cloth = ₹ 125 ÷ 5
= ₹ 25
Cost of 12 metres = ₹ 25 × 12
= ₹ 300
Thus, cost of 12 metres is ₹ 300.

```
5) 125 (25
  - 10
  ----
    25
  - 25
  ----
     0
  ----
```

```
  2 5
  × 1 2
-------
  5 0
  2 5 0
  3 0 0
```

17. Toys produced in 5 days = 4250
Toys produced in 1 day = 4250 ÷ 5
= 850
Toys produces in 20 days = 850 × 20
= 17000
Thus, 17000 toys produce in 29 days.

```
5) 4250 (850
  - 40
  ----
    25
  - 25
  ----
     0
  ----
```

```
  8 5 0
  × 2 0
-------
  0 0 0
  1 7 0 0 0
  1 7 0 0 0
```

18. Bulbs produces in 6 days = 1200
Bulbs produces in 1 day = 1200 ÷ 6
= 200
Bulbs produces in 8 days = 200 × 6
= 1600
Thus, 1600 bulbs produced in 8 days.

```
6) 1200 (200
  - 12
  ----
    000
  ----
```

```
  2 0 0
    × 8
-------
  1 6 0 0
```

19. Distance covered in 8 hrs = 440 km
Distance covered in 1 hrs = 440 ÷ 8 km
= 55 km
Ditance covered in 6 hrs = 55 × 6 km
= 330 km
Thus, 330 km distance cover in 6 hours.

```
8) 440 (55
  - 40
  ----
    40
  - 40
  ----
     0
  ----
```

```
  5 5
  × 6
-------
  3 3 0
```

20. Price of 5 locks = ₹ 225
Price of 1 lock = ₹ 225 ÷ 5
= ₹ 45
Price of 8 locks = ₹ 45 × 8
= ₹ 360
Thus, price of 8 locks is ₹ 360.

$$\begin{array}{r} 45 \\ 5\overline{)225} \\ -20 \\ \hline 25 \\ -25 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 45 \\ \times\ 8 \\ \hline 360 \end{array}$$

Mental Gym

1. b. 2. c. 3. b.

8 Multiples and Factors

Exercise 8.1

1. a. **1** is the whole number which is a multiple of every number.
b. Every number is a multiple of **1, itself.**
c. The multiples of any number are **infinite.**
d. The multiples of 10 between 30 and 90 are **40, 50, 60, 70, 80.**
e. **1** is a factor of every number.

2. a. 10, 20, 30, **40, 50, 60, 70, 90, 90**
b. 100, 200, 300, **400, 500, 600, 700, 800, 900**
c. 1000, 2000, 3000, **4000, 5000, 6000, 7000, 8000, 9000, 10,000**

3. Even numbers – (6), (8) 9, (10), (12), (14), 17, 19, 25, 27, (28), 29, (30), 31, (32), 35, 37, (104), 105, (106), 107, 109, (110), (112), 225, 237, (376), 195, 99, (206), 245, (176)

4. a. 4, 8, 12, 16, **20, 24, 28, 32** b. 7, 14, 21, 28, **35, 42, 49, 56**
c. 5, 10, 15, 20, **25, 30, 35, 40** d. 10, 20, 30, 40, **50, 60, 70, 80**

5. Odd numbers – (4), (5), 7, 9, 12, 14, (15), (17), 18, 20, (21), 22, (23), 24, 43, (44), (45), 46, 50, 52, 140, (141), (143), 150, (151), (157), 200, (201), 204, (205), 206, (207), 250, (251), 300

6.

a.	55 3	✗	b.	75 5	✓	c.	81 9	✓
d.	64 8	✓	e.	49 9	✗	f.	53 7	✗

7. a. 3 × 4 = **12** b. 4 × 6 = **24**
c. 7 × 6 = **42** d. 5 × 9 = **45**
e. (2 × 4) × 6 = **8 × 6 = 48** f. 3 × 4 × 7 = **(3 × 4) × 7 = 12 × 7 = 84**

8. a. The odd numbers between 60 and 90 are **61, 63, 65, 67, 69, 71, 73, 75, 79, 81, 83, 85, 87, 89.**
b. The smallest odd numbers is **3.**
c. The smallest even number is **2.**
d. 5 odd multiples of 7 are **7, 21, 35, 49, 63** and 5 even multiples of 7 are **14, 28, 42, 56, 70.**
e. The multiple of an even number is always **even.**
f. The multiple of an **odd** number may be odd or even.
g. Odd multiples of odd numbers are **odd.**
h. Even multiples of odd numbers are **even.**

i. The product of two numbers is also their **multiple.**

j. All multiples of 10 end with **one** zero, multiples of 100 we **two** zeros, and thousand with **three** zeros.

Exercise 8.2

1. a. Multiples of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72, 80
Multiples of 12 = 12, 24, 36, 48, 60, 72, 84, 96, 108, 120
Multiples of LCM of 8 and 12 = 24

b. Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40
Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60
LCM of 4 and 6 = 12

c. Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50
LCM of 2 and 5 = 10

d. Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90
LCM of 3 and 9 = 9

2. a. **2, 4, 6**
Multiples of 2 = 2, 4, 6, 8, 10, 12, 14
Multiples of 4 = 4, 8, 12, 16, 20, 24
Multiples of 6 = 6, 12, 18, 24, 30, 36
LCM of 2, 4 or 6 = 12

b. **3, 8, 12**
Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 30
Multiples of 8 = 8, 16, 24, 32, 40, 48
Multiples of 12 = 12, 24, 36, 48, 60, 72
LCM of 3, 8 or 12 = 24

c. **5, 7, 10**
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75
Multiples of 7 = 14, 21, 28, 35, 42, 49, 56, 63, 70, 77
Multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80
LCM of 5, 7 or 10 = 70

d. Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60
LCM of 4, 5 or 6 = 60

3. b. Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 44, 48
Multiples of 12 = 12, 24, 36, 48
Common multiples = 12, 24, 36, 48
LCM of 4 and 12 = 48

c. Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 18
Multiples of 6 = 6, 12, 18
LCM of 2 and 6 = 18

d. Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33
Multiples of 7 = 7, 14, 21, 28, 35
LCM of 3 and 7 = 21

Exercise 8.3

1. a. Factors of 32 = 32 ÷ 1 = 32; 32 ÷ 2 = 16; 32 ÷ 4 = 8
Factors of 32 are 1, 2, 4, 8, 16, 32.

b. Factors of 40 = 40 ÷ 1 = 40; 40 ÷ 2 = 20; 40 ÷ 5 = 8; 40 ÷ 4 = 10;
Factors of 40 are 1, 2, 4, 5, 8, 10, 20, 40.

c. Factors of 81 = 81 ÷ 1 = 81; 81 ÷ 3 = 27; 81 ÷ 9 = 9
Factors of 81 are 1, 3, 9, 27, 81

d. Factors of 25 = 25 ÷ 1 = 25; 25 ÷ 5 = 5
Factors of 25 are 1, 5, 25

e. Factors of 64 = 64 ÷ 1 = 64; 64 ÷ 2 = 32; 64 ÷ 4 = 16; 64 ÷ 8 = 8;
Factors of 64 are 1, 2, 4, 8, 16, 32, 64,

2. a. $12 \div 4 = \overset{Q}{3} + \overset{R}{0}$ **T** b. $64 \div 8 = \overset{Q}{8} + \overset{R}{0}$ **T** c. $91 \div 7 = \overset{Q}{13} + \overset{R}{0}$ **T**

d. $84 \div 13 = \overset{Q}{6} + \overset{R}{6}$ **F** e. $63 \div 9 = \overset{Q}{7} + \overset{R}{0}$ **T**

3. a.

Factors of 6	=	1, 2, 3, 6
Factors of 8	=	1, 2, 4, 8
Common factors of 6 and 8	=	1, 2
H.C.F. of 6 and 8	=	2

b.

Factors of 18	=	1, 2, 3, 6, 9, 18
Factors of 24	=	1, 2, 3, 4, 6, 8, 12, 24
Common factors of 18 and 24	=	1, 2, 3, 6
H.C.F. of 18 and 24	=	6

c.

Factors of 16	=	1, 2, 4, 8, 16
Factors of 48	=	1, 2, 3, 6, 8, 16, 24, 48
Common factors of 16 and 48	=	1, 2, 8, 16
H.C.F. of 16 and 48	=	16

4. a. **20, 48**

Factors of 20	=	1, 2, 4, 5, 10, 20
Factors of 48	=	1, 2, 3, 4, 6, 8, 12, 16, 24, 48
Common factors of 20 and 48	=	2, 4
H.C.F. of 20 and 48	=	4

b. **72, 90**

Factors of 72	=	1, 2, 3, 4, 6, 8, 9, 10, 12, 18, 24, 36, 72
Factors of 90	=	1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90
Common factors of 72 and 90	=	1, 2, 3, 6, 9, 18
H.C.F. of 72 and 90	=	18

c. **14, 28**

Factors of 14	=	1, 2, 7, 14
Factors of 28	=	1, 2, 4, 7, 14, 28
Common factors of 14 and 28	=	1, 2, 7, 14
H.C.F. of 14 and 28	=	14

d. **40, 56**

Factors of 40	=	1, 2, 4, 5, 8, 10, 20, 40

Factors of 28 = 1, 2, 4, 7, 14, 28
Common factors of 40 and 28 = 1, 2, 4
H.C.F. of 40 and 56 = 4

e. **36, 60**
Factors of 36 = 1, 3, 6, 4, 9, 12, 36
Factors of 60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
Common factors of 36 and 60 = 1, 6, 12
H.C.F. of 36 and 60 = 12

f. **18, 72**
Factors of 18 = 1, 2, 3, 6, 9, 18
Factors of 72 = 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72
Common factors of 18 and 72 = 1, 2, 3, 6, 18
H.C.F. of 18 and 72 = 18

g. **54, 72**
Factors of 54 = 1, 2, 3, 6, 9, 18, 27, 54
Factors of 72 = 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72
Common factors of 54 and 72 = 1, 2, 3, 6, 18
H.C.F. of 54 and 72 = 18

h. **24, 36**
Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Factors of 36 = 1, 2, 3, 4, 9, 12, 18, 36
Common factors of 24 and 36 = 1 2, 3, 4, 12
H.C.F. of 24 and 36 = 12

i. **25, 80**
Factors of 25 = 1, 5, 25
Factors of 80 = 1, 2, 4, 5, 8, 10, 16, 20, 40, 80
Common factors of 25 and 80 = 1, 5
H.C.F. 25 and 80 = 5

Exercise 8.4

1. a. (**Note :** All even numbers are divisible by 2)

44 = 44 is the even number.
So, 44 is divisible by 2.

49 = 49 is odd number.
So, 49 is not divisible by 2.

50 = 50 is even number.
So, 50 is divisible by 2.

155 = 155 is odd number.
So, 155 is not divisible by 2.

820 = 820 is even number.
So, 820 is divisible by 2.

b. (**Note :** If the sum of the digits of a number is divisible by 3, The number is divisible by?)

35 = Sum of the digits = 3 + 5 = 8
8 is not divisible by 3
So, 35 is not divisible by 3.

248 = Sum of the digits = 2 + 4 + 8 = 14

14 is not divisible by 3
So, 248 is not divisible by 3.

756 = Sum of digit = 7 + 5 + 6 = 18
14 is divisible by 3
So, 756 is divisible by 3

336 = Sum of digit = 3 + 3 + 6 = 12
12 is divisible by 3
So, 336 is divisible by 3

543 = Sum of digit = 5 + 4 + 3 = 12
12 is divisible by 3
543 is divisible by 3.

c. (**Note :** If a number is divisible by 2 and 3 both, then it is also divisible by 6)

24 = It is an even number, ∴ divisible by 2
2 + 4 = 6
∴ Sum of the digits is divisible by 3
∴ It is divisible by 3
∴ 24 is divisible by 6

154 = It is an even number, ∴ divisible by 2
Sum of digits 1 + 5 + 4 = 10
∴ 10 is not divisible by 3
So, 154 is not divisible by 6.

165 = It is an odd number,
∴ 165 is not divisible by 2
So, 165 is not divisible by 6.

492 = 492 is even number, ∴ divisible by 2.
Sum of digit 4 + 9 + 2 = 15
∴ 15 is divisible by 3.
So, 492 is divisible by 6.

921 = 921 is odd number, ∴ 921 is not divisible by 2.
So, 921 is not divisible by 6.

d. (**Note :** All numbers ending with 0 or 5 are divisible by 5.)

155 = Here, ending number is 5
So, 155 is divisible by 5.

370 = Here, ending number is 0
So, 370 is divisible by 5.

481 = Here ending number is 1.
So, 481 is not divisible by 5.

525 = Here ending number is 5
So, 525 is divisible by 5.

650 = Here ending number is 0
So, 650 is divisible by 5.

e. (**Note :** All number ending with 0 are divisible by 10.)

580 = Here ending number is 0
So, 580 is divisible by 10.

470 = Here ending number is 0
So, 470 is divisible by 10.

333 = Here ending number is 3
So, 333 is not divisible by 10.

725 = Were ending number is 5

So, 725 is not divisible by 10.

193 = Were ending number is 3.
So, 193 is not divisible by 10.

f. (**Note :** If the sum of the digits of a number is divisible by 9, the number is divisible by 9.)

369 = Sum of digits = 3 + 6 + 9 = 18
18 is divisible by 9
So, 369 is divisible by 9.

720 = Sum of digits = 7 + 2 + 0 = 9
9 is divisible by 9
So, 720 is divisible by 9.

810 = Sum of digits = 8 + 1 + 0 = 9
9 is divisible by 9
So, 810 is divisible by 9.

630 = Sum of digits = 6 + 3 + 0 = 9
9 is divisible by 9
So, 630 is divisible by 9.

470 = Sum of digits = 4 + 7 + 0 = 11
11 is not divisible by 9.
So, 470 is not divisible by 9.

g. (**Note :** To know whether a number is divisible by 7, double the ones place and subtract from the number formed by the remaining number. If the difference is divisible by 7 then the number is also divisible by 7.)

490 = We, double the digit ones place = 0 × 2 = 0
Remaining number = 49 – 0 = 49;
490 ÷ 7 = 70
So, 490 is divisible by 7.

650 = We double the digit ones place = 0 × 2 = 0
Remaining number = 65 – 0 = 65;
65 ÷ 7 = 9.283
So, 650 is not divisible by 7.

560 = We double the digit at ones place = 0 × 2 = 0
Remaining number = 56 ÷ 0 = 56;
56 ÷ 7 = 8
So, 560 is divisible by 7.

140 = We double the digit at ones place = 0 × 2 = 0
Remaining number = 14 – 0 = 14;
14 ÷ 7 = 2
So, 140 is divisible by 7.

210 = We double the digit at ones place = 0 × 2 = 0
Remaining number = 21 – 0 = 21;
21 ÷ 7 = 3
So, 210 is divisible by 7.

h. (**Note :** If last three digit of the number is divisible by 8 are divisible by 8.)

160 = Here the last three digits = 160
Which are divisible by 8
So, 160 is divisible by 8

328 = Here the last three digits = 328
Which are divisible by 8
So, 328 is divisible by 8

400 = Here the last three digits = 400
Which are divisible by 8
So, 400 is not divisible by 8.

550 = Here the last three digits = 550
Which are not divisible by 8.
So, 550 is not divisible by 8.

630 = Here the last there digits 630
Which are not divisible by 8.
So 630 is not divisible by 8.

2. a. A number is divisible by **10** ends in 0.
b. A number is divisible by **5** ends in 5 or **5.**
c. A number is divisible by **2** is not odd.
d. If the digits of a number odd up to a multiple of **3** the number us divisible by 3.
e. If a number is divisible by **2** and **3**, it is divisible by 6.
f. If the digits of a number odd up to a multiple of 9, the number is divisible by **9.**

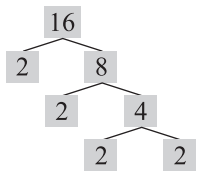
Exercise 8.5

1. a. The prime number between 1 to 39 = 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
b. The composite numbers between 1 and 30 = 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20, 24, 25, 26, 27, 28
c. The smallest prime number is 2.
d. The two consecutive prime number = 2, 3.
e. The two prime numbers less than 7 which differ by 3 = 2, 5 (5 – 3 = 2)
f. The two prime numbers less than 7 which differ by 3 = 2, 5 (5 – 2 = 3)
g. The sum of 2 prime numbers = 44
Prime number = 13, 31 (13 + 31 = 44)
h. The differences of 2 prime numbers = 4
Prime number = 3, 7 (7 3 = 4)

2. a. The only even prime number **2.**
b. There are **10** composite number between 1 and 20.
c. There are **15** prime number between 1 and 50.
d. **47** is the greatest prime number less than 50.
e. **97** is the greatest prime number less than 100.
f. **2** is the smallest prime number between 1 and 100.
g **4** is the smallest composite number between 1 and 20.
h **49** is the greatest composite number less than 50.
i. The number **1** is neither prime number nor composite.
j. Each prime number exactly **2** factors.

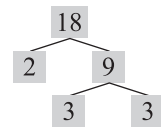
Exercise 8.6

1.



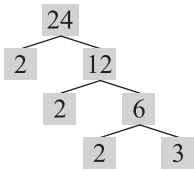
16 = 2 × 2 × 2 × 2

2.



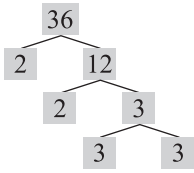
18 = 2 × 3 × 3

3.



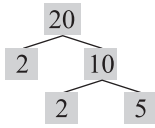
$24 = 2 \times 2 \times 2 \times 3$

4.



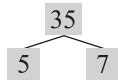
$36 = 2 \times 2 \times 3 \times 3$

5.



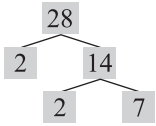
$20 = 2 \times 2 \times 5$

6.



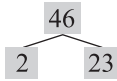
$35 = 5 \times 7$

7.



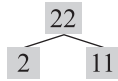
$28 = 2 \times 2 \times 7$

8.



$46 = 2 \times 23$

9.

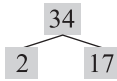


$22 = 2 \times 11$

10.

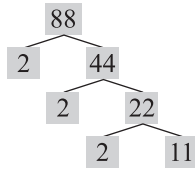
$25 = 5 \times 5$

11.



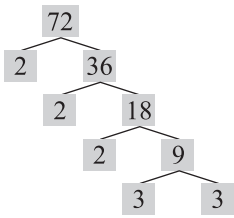
$34 = 2 \times 17$

12.



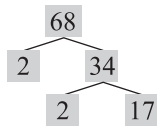
$88 = 2 \times 2 \times 2 \times 11$

13.



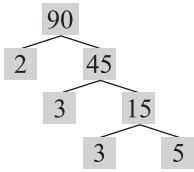
$72 = 2 \times 2 \times 2 \times 3 \times 3$

14.



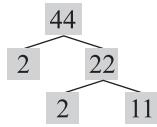
$68 = 2 \times 2 \times 17$

15.



$90 = 2 \times 3 \times 3 \times 5$

16.



$44 = 2 \times 2 \times 11$

Exercise 8.7

1.

2	24
2	12
2	6
3	3
	1

Prime factors of
$24 = 2 \times 2 \times 2 \times 3$

2.

2	40
2	20
2	10
5	5
	1

Prime factors of
$40 = 2 \times 2 \times 2 \times 5$

3.

2	28
2	14
7	7
	1

Prime factors of
$28 = 2 \times 2 \times 7$

4.

2	72
2	36
2	18
3	9
3	3
	1

Prime factors of
$72 = 2 \times 2 \times 2 \times 3 \times 3$

5.

2	16
2	8
2	4
2	2
	1

Prime factors of
$32 = 2 \times 2 \times 2 \times 2 \times 2$

6.

2	81
2	42
3	21
7	7
	1

Prime factors of
$84 = 2 \times 2 \times 3 \times 7$

7.

5	35
7	7
	1

Prime factors of
$35 = 5 \times 7$

8.

2	16
2	8
2	4
2	2
	1

Prime factors of
$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$

9.

3	81
3	27
3	9
3	3
	1

Prime factors of
$81 = 3 \times 3 \times 3 \times 3$

10.

3	27
3	9
3	3
	1

Prime factors of
$27 = 3 \times 3 \times 3$

11.

2	106
53	53
	1

Prime factors of
$106 = 2 \times 53$

12.

2	86
43	43
	1

Prime factors of
$86 = 2 \times 43$

13.

3	729
3	243
3	81
3	27
3	9
3	3
	1

Prime factors of
$729 = 3 \times 3 \times 3 \times 3 \times 3 \times 3$

14.

2	36
2	18
3	9
3	3
	1

Prime factors of
$36 = 2 \times 2 \times 3 \times 3$

15.

2	72
2	36
2	18
3	9
3	3
	1

Prime factors of
$72 = 2 \times 2 \times 2 \times 3 \times 3$

16.

2	144
2	72
2	36
2	18
3	9
3	3
	1

Prime factors of
144 = 2×2×2×2×3×3

17.

2	98
7	49
7	7
	1

Prime factors of
98 = 2 × 7 × 7

18.

2	320
2	160
2	80
2	40
2	20
2	10
5	5
	1

Prime factors of
320 = 2×2×2×2×2×2×5

19.

2	48
2	24
2	12
2	6
3	3
	1

Prime factors of 48 = 2 × 2 × 2 × 2 × 3

20.

7	49
7	7
	1

Prime factors of 49 = 7 × 7

Exercise 8.8

1. a. **36, 48**

2	36, 48
2	18, 24
2	9, 12
2	9, 6
3	9, 3
3	3, 1
	1, 1

LCM of 36 and
48 = 2 × 2 × 2 ×
2 × 3 × 3 = 144

b. **24, 30**

2	24, 30
2	12, 15
2	6, 15
3	3, 15
5	1, 5
	1, 1

LCM of 24 and
30 = 2 × 2 × 2 ×
3 × 5 = 120

c. **15, 30, 45**

2	15, 30, 45
3	15, 15, 45
3	5, 5, 15
5	5, 5, 5
	1, 1, 1

LCM of 15, 30 and
45 = 2 × 3 × 3 × 5
= 90

d. **35, 40, 50**

2	35, 40, 50
2	35, 20, 25
2	35, 10, 25
5	35, 5, 25
5	7, 1, 5
7	7, 1, 1
	1, 1, 1

LCM of 35, 40 and
50 = 2 × 2 × 2 × 5 ×
5 × 7 = 1490

e. **96, 120, 144**

2	96, 120, 144
2	48, 60, 72
2	24, 30, 36
3	12, 15, 12
2	4, 5, 6
	2, 5, 3

LCM of 96, 120 and
144 = 2 × 2 × 2 × 3 ×
2 × 2 × 5 × 3 = 1440

f. **19, 57, 97**

3	19, 57, 97
19	19, 19, 97
97	1, 1, 97
	1, 1, 1

Prime factors of 19,
57 and 97 = 3× 19 ×
97 = 5520

g. **195, 210, 270**

2	195, 210, 270
3	195, 105, 135
3	65, 35, 45
3	65, 35, 15
5	65, 35, 5
7	13, 7, 1
13	13, 1, 1
	1, 1, 1

LCM of 195, 210 and 270 = 2 × 3 × 3 × 3 × 5 × 7 × 13 = 24570

h. **180, 684, 432**

2	180, 684, 432
2	90, 342, 216
3	45, 171, 108
3	15, 57, 86
3	5, 19, 12
4	5, 19, 4
5	5, 19, 1
19	1, 19, 1
	1, 1, 1

LCM of 180, 684 and 432 = 2 × 2 × 3 × 3 × 3 × 4 × 5 × 19 = 41040

i. **1020, 935**

5	1020, 935
17	204, 187
11	12, 11
12	12, 1
	1, 1

LCM of 1020 and 935 = 5 × 17 × 11 × 12 = 11220

j. **24, 40**

2	24, 40
2	12, 20
2	6, 10
2	3, 10
3	3, 5
5	1, 5
	1,1

LCM of 24, 40 = 2 × 2 × 2 × 2 × 3 × 5 = 240

k. **85, 850, 285, 2850**

2	85, 850, 285, 2850
5	85, 425, 285, 1425
5	17, 85, 57, 285
3	17, 17, 57, 57
17	17, 17, 19, 19
19	1, 1, 19, 19
	1, 1, 1, 1

LCM of 85, 50, 285 and 2850 = 2 × 3 × 5 × 5 × 17 × 19 = 48450

l. **1296, 2160, 3024, 972**

2	1296, 2160, 3024, 972
2	648, 1080, 1512, 486
2	324, 540, 756, 243
2	162, 270, 378, 243
3	81, 135, 189, 243
3	27, 45, 63, 81
3	9, 15, 21, 27
3	3, 5, 7, 9
3	1, 5, 7, 3
5	1, 5, 7,1
7	1, 1, 7, 1
	1, 1, 1, 1

LCM of 1296, 2160, 3024, 972 = 2 × 2 × 2 × 2 × 3 × 3 × 3 ×3 × 5 × 7 = 136080

2. a. **12, 18, 36**

Prime factor of 12 = $2 \times 2 \times 3$

Prime factor of 18 = $2 \times 3 \times 3$

Prime factor of 36 = $2 \times 2 \times 3 \times 3$

LCM of 12, 18, 36 = $2 \times 2 \times 3 \times 3$

= 36

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

2	36
2	18
3	9
3	3
	1

b. **14, 21**

Prime factor of 14 = 2×7

Prime factor of 21 = 3×7

LCM of 14 and 21 = $2 \times 3 \times 7$ = 42

2	14
7	7
	1

3	21
7	7
	1

c. **100, 75**

Prime factor of 100 = $2 \times 2 \times 5 \times 5$

Prime factor of 75 = $3 \times 5 \times 5$

LCM of 100 and 75 = $2 \times 2 \times 3 \times 5 \times 5$

= 300

2	100
2	50
5	25
5	5
	1

3	75
5	25
5	5
	1

d. **20, 40**

Prime factor of 20 = $2 \times 2 \times 5$

Prime factor of 40 = $2 \times 2 \times 2 \times 5$

LCM of 20 and 40 = $2 \times 2 \times 2 \times 5$

= 40

2	20
2	10
5	5
	1

2	40
2	20
2	10
5	5
	1

e. **25, 75, 50**

Prime factors of 25 = 5×5

Prime factors of 75 = $3 \times 5 \times 5$

Prime factors of 50 = $2 \times 5 \times 5$

LCM of 25, 75 and 50 = $3 \times 2 \times 5 \times 5$

= 150

5	25
5	25
	1

3	75
5	25
5	5
	1

2	50
5	25
5	5
	1

f. **12, 16, 18**

Prime factor of 12 = $2 \times 2 \times 3$

Prime factor of 16 = $2 \times 2 \times 2 \times 2$

Prime factor of 18 = $2 \times 3 \times 3$

LCM of 12, 16 and 18 = $2 \times 2 \times 3 \times 3 \times 2 \times 2$

= 144

2	12
2	6
3	3
	1

2	16
2	8
2	4
2	2
	1

2	18
3	9
3	3
	1

g. **4, 8, 12**

Prime factor of 4 = 2×2

Prime of factor of 8 = $2 \times 2 \times 2$

Prime factor of 12 = $2 \times 2 \times 3$

LCM of 4, 8 and 12 = $2 \times 2 \times 2 \times 3$

= 24

2	4
2	2
	1

2	8
2	4
2	2
	1

2	12
2	6
3	3
	1

h. **16, 48**

Prime factor of 16 = $2 \times 2 \times 2 \times 2$

Prime factor of 48 = $2 \times 2 \times 2 \times 2 \times 3$

LCM of 16 and 48 = $2 \times 2 \times 2 \times 2 \times 3$

= 48

2	16
2	8
2	4
2	2
	1

2	48
2	24
2	12
2	6
3	3
	1

i. **72, 84, 96**

2	84
2	42
3	21
7	7
	1

2	96
2	48
2	24
2	12
2	6
3	3
	1

Prime factors of 72 = $2 \times 2 \times 2 \times 3 \times 3$
Prime factors of 84 = $2 \times 2 \times 3 \times 7$
Prime factors of 96 = $2 \times 2 \times 2 \times 2 \times 2 \times 3$
LCM of 72, 84 and 96 = $2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 7$ = 2016

j. **8, 10, 12, 14**

2	8
2	4
2	2
	1

2	10
5	5
	1

2	12
2	6
3	3
	1

2	14
7	7
	1

Prime factor of 8 = $2 \times 2 \times 2$
Prime factor of 10 = 2×5
Prime factor of 12 = $2 \times 2 \times 3$
Prime factor of 14 = 2×7
LCM of 8, 10, 12 and 14 = $2 \times 2 \times 2 \times 3 \times 5 \times 7$ = 840

k. **3, 4, 5**

Prime factor of 3 = 3
Prime factor of 4 = 2×2
Prime factor of 5 = 5
LCM of 3, 4 and 5 = $3 \times 2 \times 2 \times 5$
= 60

3	3
	1

2	4
2	2
	1

5	5
	1

l. **20, 25**

Prime factor of 20 = $2 \times 2 \times 5$
Prime factor of 25 = 5×5
LCM of 20 and 25 = $2 \times 2 \times 5 \times 5$
= 100

2	20
2	10
5	5
	1

5	25
5	5
	1

m. **4, 12**

Prime factors of 4 = 2×2
Prime factor of 12 = $2 \times 2 \times 3$
LCM of 4 and 12 = $2 \times 2 \times 3$
= 12

2	4
2	2
	1

2	12
2	6
3	3
	1

Exercise 8.9

1. 20, 48

2	20
2	10
5	5
	1

2	48
2	24
2	12
2	6
3	3
	1

20 = $2 \times 2 \times 5$
48 = $2 \times 2 \times 2 \times 2 \times 3$
HCF of 20 and 48 = 2×2
= 4

2. 72, 90

2	72
2	36
2	18
3	9
3	3
	1

2	90
3	45
3	15
5	5
	1

72 = 2 × 2 × 2 × 3 × 3
90 = 2 × 3 × 3 × 5
HCF of 72 and 90 = 2 × 3 × 3
= 18

3. 84, 160

2	84
2	42
3	21
7	7
	1

2	160
2	80
2	40
2	20
2	10
5	5
	1

84 = 2 × 2 × 3 × 7
160 = 2 × 2 × 2 × 2 × 2 × 5
HCF of 84 and 160 = 2 × 2
= 4

4. 540, 72

2	540
2	270
3	135
3	45
3	15
5	5
	1

2	72
2	36
2	18
3	9
3	3
	1

540 = 2 × 2 × 3 × 3 × 3 × 5
72 = 2 × 2 × 2 × 3 × 3
HCF of 540 and 72
= 2 × 2 × 3 × 3 = 36

5. 165, 220

3	165
5	55
11	11
	1

2	220
2	110
5	55
11	11
	1

165 = 3 × 5 × 11
220 = 2 × 2 × 5 × 11
HCF of 165 and 220 = 5 × 11
= 55

6. 580, 440

2	580
2	290
5	145
29	29
	1

2	440
2	220
2	110
5	55
11	11
	1

580 = 2 × 2 × 5 × 29
440 = 2 × 2 × 2 × 5 × 11
HCF of 580 and 440 = 2 × 2 × 5
= 20

7. 724, 686

2	724
2	362
181	181
	1

2	686
7	343
7	49
7	7
	1

724 = 2 × 2 × 181
686 = 2 × 7 × 7 × 7
HCF of 724 and 686 = 2

8. 1080, 1200

2	1080
2	540
2	270
3	135
3	45
3	15
5	5
	1

2	1200
2	600
2	300
2	150
3	75
5	25
5	5
	1

1080 = 2 × 2 × 2 × 3 × 3 × 5
1200 = 2 × 2 × 2 × 2 × 3 × 5
HCF of 1080 and 1200
50 = 2 × 2 × 2 × 3 × 5
= 120

9. 2150, 3225

2	2150
5	1075
5	215
43	43
	1

3	3225
5	1075
5	215
43	43
	1

$2150 = 2 \times 5 \times 5 \times 43$
$3225 = 5 \times 3 \times 5 \times 43$
HCF of 2150 and
$3225 = 5 \times 5 \times 43$
$= 1075$

10. 1752, 2044

2	160
2	80
2	40
2	20
2	10
5	5
	1

3	3225
5	1075
5	215
43	43
	1

$1752 = 2 \times 2 \times 2 \times 3 \times 73$
$2044 = 2 \times 2 \times 7 \times 73$
HCF of 1752 and
$2044 = 2 \times 2 \times 73$
$= 292$

11. 86, 234, 128

2	83
43	43
	1

2	234
3	117
3	39
13	13
	1

2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

$86 = 2 \times 43$
$234 = 2 \times 3 \times 3 \times 13$
$128 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$
HCF of 86, 234 and 128 = 2

12. 246, 321, 405

2	246
2	123
41	41
	1

3	321
	107

3	405
3	135
3	45
7	15
5	5
	1

$246 = 2 \times 3 \times 41$
$321 = 3 \times 107$
$405 = 3 \times 3 \times 3 \times 5$
HCF of 246, 321 and 105 = 3

Exercise 8.10

1. The lowest number :
LCM of 12, 18, 24 and 36
$2 \times 2 \times 2 \times 3 \times 3 = 72$
The lowest number which is divisible by
12, 18, 24 and 36 $= 72 - 2$
$= 70$

2	12, 18, 24, 36
2	6, 9, 12, 18
2	3, 9, 6, 9
3	3, 9, 3, 9
3	1, 3, 1, 3
	1, 1, 1, 1

2. The greatest number :
HCF of 264 and 792
$\therefore 264 = 2 \times 2 \times 2 \times 3 \times 11$
$792 = 2 \times 2 \times 2 \times 3 \times 3 \times 11$
HCF of 264 and 792 $= 2 \times 2 \times 2 \times 3 \times 11$
$= 264$

2	264
2	132
2	66
3	33
11	11
	1

2	792
2	396
2	198
3	99
3	33
11	11
	1

3. The lowest number :
LCM of 12, 14, 18, 21 = $2 \times 2 \times 3 \times 3 \times 7$
= 252
The lowest number which is divisible by 12, 14, 18 and 21 = 252 – 4 = 248

2	12, 14, 18, 21
2	6, 7, 9, 21
3	3, 7, 9, 21
3	1, 7, 3, 7
7	1, 7, 1, 7
	1, 1, 1, 1

4. For this, we will subtract 4 from both 979 and 706
Now 979 – 4 = 975 and 706 – 4 = 704
The greatest number that will divide 975, 702 is their HCF
975 = $5 \times 5 \times 3 \times 13$
702 = $2 \times 3 \times 3 \times 3 \times 13$
HCF of 975 and 702 = 13×3 = 39

5	975
5	195
3	39
13	13
	1

2	702
3	351
3	117
3	39
13	13
	1

5. The smallest number :
LCM of 20 and 25 = $4 \times 5 \times 5$ = 100
The smallest number which divided by 20 and 25 is 100.

4	20, 25
5	5, 25
5	1, 5
	1, 1

6. Intervals between the ringing of three bells = 15, 20, 30 minutes
LCM of 15, 20, 30 = $2 \times 2 \times 3 \times 5$ = 60
Thus, the bell will ring after 60 minutes or 1 hour again or they will ring at 12:00 mid-day.

2	15, 20, 30
2	15, 10, 15
3	15, 5, 15
3	5, 5, 5
5	1, 1, 1

7. The smallest number
LCM of 12, 15, 18 and 27
= $2 \times 2 \times 3 \times 3 \times 3 \times 5$ = 540
The smallest number which are divisible by 12, 15, 18 and 27 leaves 3 as remainder 3 = 540 + 3 = 543.

2	12, 15, 18, 27
2	6, 15, 9, 27
3	3, 15, 9, 27
3	1, 5, 3, 9
3	1, 5, 1, 3
5	1, 5, 1, 1
	1, 1, 1, 1

8. The least number
LCM of 10 and 24 = $2 \times 2 \times 2 \times 3 \times 5$
= 120
The least number which is divisible by 10 and 24
120 – 5 = 115

2	10, 24
2	5, 12
2	5, 6
3	5, 3
5	5, 1
	1, 1

9. a. 14 and 21 without a remainder

2	14
7	7
	1

3	21
7	7
	1

14 = 2×7

b. 12 and 18 without a remainder

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

12 = $2 \times 2 \times 3$

21 = 3 × 7 | 18 = 2 × 3 × 3

HCF of 14 and 21 = 7 | HCF of 12 and 18 = 3

The largest number is 7. | The lowest number = 3

c. The largest number that can divide both 10 and 14 leaving a remainder should be less than the smaller number that is 10.

∴ 10 – 1 = 9 | ∴ 9 is the required number.

d. The largest number that can divide both 9 and 23 leaving a remainder should be 1 less than the smallest number. That is 9.

∴ 9 – 1 = 8 | ∴ 8 is the required number.

10. a. LCM of 12 and 8

2	12, 8
2	6, 4
2	3, 2
3	3, 1
	1, 1

LCM = 2 × 2 × 2 × 3

= 24

Required number = 24 + 5 = 29

b. LCM of 12 and 15

3	12, 15
4	4, 5
5	1, 5
	1, 1

LCM = 3 × 4 × 5

= 60

Required number = 60 + 2 = 62

c. LCM of 12, 15 and 20

3	12, 15, 20
4	4, 5, 20
5	1, 5, 5
	1, 1, 1

LCM = 3 × 4 × 5 = 60

Required number = 60.

11. The least number

LCM of 12, 15, 18 and 36

2 × 2 × 3 × 3 × 5 = 180

The least number which is divisible by 12, 15, and 18 and 36 = 180.

2	12, 15, 18, 36
2	6, 15, 9, 18
3	3, 15, 9, 9
3	1, 5, 3, 3
5	1, 5, 1, 1
	1, 1, 1, 1

Check :

12) 180 (15
– 12
60
– 60
0

15) 180 (12
– 15
30
30
0

18) 180 (10
– 180
0

36) 180 (5
– 180
0

12. Capacity of the pots can be used = 12, 18, 24

∴ Minimum capacity of the water tank is the LCM of 12, 18 and 24

2 × 2 × 2 × 3 × 3 = 72

Thus minimum capacity of water tank = 72 l

2	12, 18, 24
2	6, 9, 12
2	3, 9, 6
3	3, 9, 3
3	1, 3, 3
	1, 1, 1

Check :

$12\overline{)72}\,(6$
-72
0

$18\overline{)72}\,(4$
-72
0

$24\overline{)72}\,(3$
-72
0

Mental Gym

1. d. 2. d. 3. c.
4. d. 5. b. 6. a.

Have a Fun

a. Rabbits in Winner's Den have numbers which are common multiples **3, 5, 7** and **9.**
b. Is the number 6 of factor of these? **No**
c. This shows that common multiples of 2 and 3 are multiples of **6.**
d. This also shows that a number with 6 as a factor, has **2** and **3** is its factors.

9 Fractions

Exercise 9.1

1. a. $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10}$

$\left(\frac{1\times3}{2\times3} = \frac{3}{6}\ ;\quad \frac{1\times4}{2\times4} = \frac{4}{8}\ ;\quad \frac{1\times5}{2\times5} = \frac{5}{10}\right)$

b. $\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12}$

$\left(\frac{2\times2}{3\times2} = \frac{4}{6}\ ;\quad \frac{2\times3}{3\times3} = \frac{6}{9}\ ;\quad \frac{2\times4}{3\times4} = \frac{8}{12}\right)$

c. $\frac{2}{7} = \frac{4}{14} = \frac{6}{21} = \frac{16}{56}$

$\left(\frac{2\times3}{7\times3} = \frac{6}{21}\ ;\quad \frac{2\times8}{7\times8} = \frac{16}{56}\right)$

d. $\frac{1}{5} = \frac{2}{10} = \frac{3}{15} = \frac{4}{20}$

$\left(\frac{1\times2}{5\times2} = \frac{2}{10}\ ;\quad \frac{1\times3}{5\times3} = \frac{3}{15}\ ;\quad \frac{1\times4}{5\times4} = \frac{4}{20}\right)$

e. $\frac{3}{10} = \frac{6}{20} = \frac{12}{10} = \frac{15}{50}$

$$\left(\frac{3\times2}{10\times2}=\frac{6}{20}\ ;\qquad \frac{3\times4}{10\times4}=\frac{12}{40}\ ;\qquad \frac{3\times5}{10\times5}=\frac{15}{50}\right)$$

f. $\frac{5}{11}=\frac{15}{33}=\frac{20}{44}=\frac{45}{99}$

$$\left(\frac{5\times3}{11\times3}=\frac{15}{33}\ ;\qquad \frac{5\times4}{11\times4}=\frac{20}{44}\ ;\qquad \frac{5\times9}{11\times9}=\frac{45}{99}\right)$$

g. $\frac{5}{6}=\frac{15}{30}=\frac{30}{36}=\frac{60}{72}$

$$\left(\frac{5\times3}{6\times3}=\frac{15}{30}\ ;\qquad \frac{5\times6}{6\times6}=\frac{30}{36}\ ;\qquad \frac{5\times12}{6\times12}=\frac{60}{72}\right)$$

h. $\frac{6}{13}=\frac{12}{26}=\frac{18}{39}=\frac{24}{52}$

$$\left(\frac{6\times2}{13\times2}=\frac{12}{26}\ ;\qquad \frac{6\times3}{13\times3}=\frac{18}{39}\ ;\qquad \frac{6\times4}{13\times4}=\frac{24}{52}\right)$$

2. b. $\frac{10}{30}=\frac{10\div10}{30\div10}=\frac{1}{3}$ c. $\frac{25}{45}=\frac{25\div5}{45\div5}=\frac{5}{9}$

d. $\frac{7}{21}=\frac{7\div7}{21\div7}=\frac{1}{3}$ e. $\frac{144}{180}=\frac{144\div36}{180\div36}=\frac{4}{5}$

f. $\frac{120}{360}=\frac{120\div120}{360\div120}=\frac{1}{4}$ g. $\frac{21}{42}=\frac{21\div21}{42\div21}=\frac{1}{2}$

h. $\frac{90}{110}=\frac{90\div10}{110\div10}=\frac{9}{11}$ i. $\frac{22}{44}=\frac{22\div22}{44\div22}=\frac{1}{2}$

j $\frac{56}{72}=\frac{56\div8}{72\div8}=\frac{7}{9}$ k. $\frac{21}{35}=\frac{21\div7}{35\div7}=\frac{3}{5}$

l. $\frac{39}{65}=\frac{39\div13}{65\div13}=\frac{3}{5}$

3. a. $\frac{1}{3}=\frac{1\times20}{3\times20}=\frac{20}{60}$ b. $\frac{4}{5}=\frac{4\times5}{5\times5}=\frac{20}{25}$

c. $\frac{1}{4}=\frac{1\times20}{4\times20}=\frac{5}{20}$ d. $\frac{10}{17}=\frac{10\times2}{17\times2}=\frac{20}{34}$

4. a. $\frac{3}{5}=\frac{3\times4}{5\times4}=\frac{12}{20}$ b. $\frac{9}{10}=\frac{9\times2}{10\times2}=\frac{18}{20}$

c. $\frac{35}{100}=\frac{35\div5}{100\div5}=\frac{7}{20}$ d. $\frac{7}{10}=\frac{7\times2}{10\times2}=\frac{14}{20}$

Exercise 9.2

1. (**Note :** Like fraction are those fractions which have the same denominator).
The following groups are like fraction

a. $\frac{1}{7}$; $\frac{3}{7}$; $\frac{4}{7}$ c. $\frac{3}{9}$; $\frac{5}{9}$; $\frac{7}{9}$ e. $\frac{1}{11}$; $\frac{7}{11}$; $\frac{4}{11}$

2. a. **$\frac{1}{3}$ and $\frac{8}{15}$**

(LCM of 3 and 15 = 15)

$\therefore \frac{1 \times 5}{3 \times 5} = \frac{5}{15}$; $\frac{8 \times 1}{15 \times 1} = \frac{8}{15}$

Now, compare $\frac{5}{15}$ and $\frac{8}{15}$ $\therefore 5 < 8$

$\therefore \frac{1}{3} < \frac{8}{15}$; $\frac{8}{15}$ is greater.

b. **$\frac{2}{3}$ and $\frac{2}{7}$**

(LCM of 3 and 7 = 21)

$\therefore \frac{2 \times 7}{3 \times 7} = \frac{14}{21}$; $\frac{2 \times 3}{7 \times 3} = \frac{6}{21}$

Now, compare $\frac{14}{21}$ and $\frac{6}{21}$ $\therefore 14 > 6$

$\therefore \frac{2}{3} > \frac{2}{7}$; $\frac{2}{3}$ is greater.

c. **$\frac{8}{11}$ and $\frac{8}{15}$**

(LCM of 11 and 15 = 165)

$\therefore \frac{8 \times 15}{11 \times 15} = \frac{120}{165}$; $\frac{8 \times 11}{15 \times 11} = \frac{88}{165}$

Now, compare $\frac{8}{11}$ and $\frac{8}{15}$ $\therefore 120 > 80$

$\therefore \frac{8}{11} > \frac{15}{15}$; $\frac{8}{11}$ is greater.

d. **$\frac{7}{9}$ and $\frac{78}{12}$**

(LCM of 9 and 12 = 36)

$\therefore \quad \frac{7 \times 4}{9 \times 4} = \frac{28}{36} \quad ; \quad \frac{78 \times 3}{12 \times 3} = \frac{234}{36}$

Now, compare $\frac{7}{9}$ and $\frac{78}{12}$ $\quad \therefore \quad 28 < 234$

$\therefore \quad \frac{7}{9} < \frac{78}{12}$; $\frac{78}{12}$ is greater.

e. $\mathbf{\frac{23}{24}}$ **and** $\mathbf{\frac{23}{30}}$

(LCM of 24 and 30 = 120)

$\therefore \quad \frac{23 \times 5}{24 \times 5} = \frac{115}{120} \quad ; \quad \frac{23 \times 4}{30 \times 4} = \frac{92}{120}$

Now, compare $\frac{23}{24}$ and $\frac{23}{30}$ $\quad \therefore \quad 115 > 92$

$\therefore \quad \frac{23}{24} > \frac{23}{30}$; $\frac{23}{24}$ is greater.

3. a. $\frac{1}{2}$, $\frac{1}{8}$, $\frac{1}{4}$

(As the numerator is same, we will look at the denominators. Among the denominators 8 is the greater.

Thus $\frac{1}{8}$ is the smallest fraction.)

b. $\frac{1}{8}$, $\frac{3}{8}$, $\frac{7}{8}$ Smallest fraction = $\frac{1}{8}$

c. $\frac{2}{5}$, $\frac{3}{5}$, $\frac{1}{5}$ Smallest fraction = $\frac{1}{5}$

d. $\frac{2}{9}$, $\frac{7}{9}$, $\frac{4}{6}$

First we making denominator equal
(LCM of 9 and 6 = 18)

$\left(\frac{2 \times 2}{9 \times 2} = \frac{4}{18} \; ; \quad \frac{7 \times 2}{9 \times 2} = \frac{14}{18} \; ; \quad \frac{4 \times 3}{6 \times 3} = \frac{12}{18} \right)$

Now, compare $\frac{4}{18}$, $\frac{14}{18}$ and $\frac{12}{18}$; $4 < 14 < 12$

$\frac{2}{9}$ or $\frac{4}{18}$ is smallest fraction.

e. $\frac{3}{7}$; $\frac{4}{7}$; $\frac{9}{7}$ Smallest fraction = $\frac{3}{7}$

Exercise 9.3

1. a. $\frac{19}{17}$ = (✗) b. $\frac{216}{25}$ = (✗) c. $\frac{9}{17}$ = (✓) d. $\frac{160}{97}$ = (✗)

e. $\frac{100}{152}$ = (✓) f. $\frac{151}{200}$ = (✓) g. $\frac{27}{28}$ = (✓) h. $\frac{128}{15}$ = (✗)

i. $\frac{15}{17}$ = (✓) j. $\frac{25}{27}$ = (✓) k. $\frac{29}{24}$ = (✗) l. $\frac{121}{150}$ = (✓)

2. a. $\mathbf{2\frac{1}{5}} = \frac{2\times5+1}{2} = \frac{10+1}{5} = \frac{11}{5}$

b. $\mathbf{3\frac{2}{4}} = \frac{3\times4+2}{4} = \frac{12+2}{4} = \frac{14}{4}$

c. $\mathbf{2\frac{5}{7}} = \frac{2\times7+5}{7} = \frac{14+5}{7} = \frac{19}{7}$

d. $\mathbf{3\frac{4}{5}} = \frac{3\times5+4}{5} = \frac{15+4}{5} = \frac{19}{5}$

e. $\mathbf{2\frac{4}{9}} = \frac{2\times9+4}{9} = \frac{18+4}{5} = \frac{22}{5}$

f. $\mathbf{2\frac{7}{8}} = \frac{2\times8+7}{8} = \frac{16+7}{8} = \frac{23}{8}$

g. $\mathbf{3\frac{3}{4}} = \frac{3\times4+3}{4} = \frac{12+3}{4} = \frac{15}{4}$

h. $\mathbf{9\frac{1}{7}} = \frac{9\times7+1}{7} = \frac{63+1}{7} = \frac{64}{7}$

i. $\mathbf{4\frac{3}{8}} = \frac{4\times8+3}{8} = \frac{32+3}{8} = \frac{35}{8}$

j. $\mathbf{2\frac{1}{6}} = \frac{2\times6+1}{6} = \frac{12+1}{6} = \frac{13}{6}$

k. $\mathbf{3\frac{5}{7}} = \frac{3\times7+5}{7} = \frac{21+5}{7} = \frac{26}{7}$

l. $\mathbf{4\frac{3}{7}} = \frac{4\times7+3}{7} = \frac{28+3}{7} = \frac{31}{7}$

m. $\mathbf{5\frac{7}{15}} = \frac{5\times15+7}{15} = \frac{75+7}{15} = \frac{82}{15}$

n. $\mathbf{6\frac{7}{9}} = \frac{6\times9+7}{9} = \frac{54+7}{9} = \frac{61}{9}$

Exercise 9.4

1. a. $\frac{\mathbf{17}}{\mathbf{6}} = Q + \frac{R}{D} = 2 + \frac{5}{6} = 2\frac{5}{6}$

D – 6) 17 (2 – Q
− 12
5 – R

b. $\frac{\mathbf{21}}{\mathbf{6}} = Q + \frac{R}{D} = 3 + \frac{3}{6} = 3\frac{3}{6}$

D – 6) 21 (3 – Q
− 18
3 – R

c. $\frac{\mathbf{19}}{\mathbf{3}} = Q + \frac{R}{D} = 6 + \frac{1}{3} = 6\frac{1}{3}$

D – 3) 19 (6 – Q
− 18
1 – R

d. $\frac{\mathbf{28}}{\mathbf{5}} = Q + \frac{R}{D} = 5 + \frac{3}{5} = 5\frac{3}{5}$

D – 5) 28 (5 – Q
− 25
3 – R

e. $\frac{\mathbf{16}}{\mathbf{3}} = Q + \frac{R}{D} = 5 + \frac{1}{3} = 5\frac{1}{3}$

D – 3) 16 (5 – Q
− 15
1 – R

f. $\frac{\mathbf{29}}{\mathbf{5}} = Q + \frac{R}{D} = 5 + \frac{4}{5} = 5\frac{4}{5}$

D – 5) 29 (5 – Q
− 25
4 – R

g. $\frac{\mathbf{26}}{\mathbf{4}} = Q + \frac{R}{D} = 6 + \frac{2}{4} = 6\frac{2}{4}$

D – 4) 26 (6 – Q
− 24
2 – R

h. $\frac{\mathbf{19}}{\mathbf{4}} = Q + \frac{R}{D} = 4 + \frac{3}{4} = 4\frac{3}{4}$

D – 4) 19 (4 – Q
− 16
3 – R

i. $\frac{\mathbf{34}}{\mathbf{3}} = Q + \frac{R}{D} = 11 + \frac{1}{3} = 11\frac{1}{3}$

D – 3) 34 (11 – Q
− 3
4
− 3
1 – R

j. $\frac{\mathbf{97}}{\mathbf{6}} = Q + \frac{R}{D} = 16 + \frac{1}{6} = 16\frac{1}{6}$

D – 6) 97 (16 – Q
− 6
37
− 36
1 – R

k. $\mathbf{\frac{145}{12}} = Q + \frac{R}{D} = 12 + \frac{1}{12} = 12\frac{1}{2}$

D – 12) 145 (12 – Q
− 12
25
− 24
1 – R

l. $\mathbf{\frac{19}{5}} = Q + \frac{R}{D} = 3 + \frac{4}{5} = 3\frac{4}{5}$

D – 5) 19 (4 – Q
− 15
3 – R

2. a. $\mathbf{5\frac{1}{7}} = \frac{5 \times 7 + 1}{7} = \frac{35 + 1}{7} = \frac{36}{7}$

b. $\mathbf{4\frac{2}{3}} = \frac{4 \times 3 + 2}{3} = \frac{12 + 2}{3} = \frac{14}{3}$

c. $\mathbf{6\frac{2}{3}} = \frac{6 \times 3 + 2}{3} = \frac{18 + 2}{3} = \frac{20}{3}$

d. $\mathbf{7\frac{1}{3}} = \frac{7 \times 3 + 1}{3} = \frac{21 + 1}{3} = \frac{22}{3}$

e. $\mathbf{8\frac{1}{2}} = \frac{8 \times 2 + 1}{2} = \frac{16 + 1}{2} = \frac{17}{2}$

f. $\mathbf{9\frac{1}{4}} = \frac{9 \times 4 + 1}{4} = \frac{36 + 1}{4} = \frac{37}{4}$

g. $\mathbf{1\frac{2}{9}} = \frac{1 \times 9 + 2}{9} = \frac{9 + 2}{4} = \frac{11}{4}$

h. $\mathbf{5\frac{4}{5}} = \frac{5 \times 5 + 4}{5} = \frac{25 + 4}{5} = \frac{29}{5}$

i. $\mathbf{6\frac{1}{7}} = \frac{6 \times 7 + 1}{7} = \frac{42 + 1}{7} = \frac{43}{7}$

j. $\mathbf{7\frac{7}{11}} = \frac{7 \times 11 + 7}{11} = \frac{77 + 7}{11} = \frac{84}{11}$

k. $\mathbf{8\frac{2}{5}} = \frac{8 \times 5 + 2}{5} = \frac{40 + 2}{5} = \frac{42}{5}$

l. $\mathbf{16\frac{1}{6}} = \frac{16 \times 6 + 1}{6} = \frac{96 + 1}{6} = \frac{97}{6}$

Exercise 9.5

1. a. $\frac{8}{13}, \frac{5}{13}, \frac{4}{13}, \frac{9}{13}$

All the fractions are like. Arrange all the fraction in the ascending order of their numerator as given below :

$$4 < 5 < 8 < 9$$

or $\frac{4}{13} < \frac{5}{13} < \frac{8}{13} < \frac{9}{13}$

b. $\frac{3}{5}, \frac{4}{5}, \frac{9}{5}, \frac{2}{5}$

All the fractions are like. Arrange all the fraction in the ascending order of their numerator as given below :

$$\frac{2}{5} < \frac{3}{5} < \frac{4}{5} < \frac{9}{5}$$

c. $\frac{3}{7}, \frac{9}{7}, \frac{6}{7}, \frac{8}{7}$

All the fractions are like fractions. Arrange all the fraction in the ascending order of their numerator as given below :

$$\frac{3}{7} < \frac{6}{7} < \frac{8}{7} < \frac{9}{7}$$

d. $\frac{3}{11}, \frac{6}{11}, \frac{1}{11}, \frac{7}{11}$

All the fractions are like fractions. Arrange all the fraction in the ascending order of their numerator as given below :

$$\frac{1}{11} < \frac{3}{11} < \frac{6}{11} < \frac{7}{11}$$

e. $\frac{4}{9}, \frac{3}{9}, \frac{5}{9}, \frac{2}{9}$

All the fractions are like fractions. Arrange all the fraction in the ascending order of their numerator as given below :

$$\frac{2}{9} < \frac{3}{9} < \frac{4}{9} < \frac{5}{9}$$

f. $\frac{5}{8}, \frac{3}{5}, \frac{2}{3}, \frac{3}{4}$

All the fractions are unlike fractions.
We first convert into like fraction.
LCM of 8, 5, 3 and 4 = 2 × 2 × 2 × 2 × 5 = 120

2	8, 5, 3, 4
2	4, 5, 3, 2
2	2, 5, 3, 1
3	1, 5, 3, 1
5	1, 5, 1, 1
	1, 1, 1, 1

$$\frac{5}{8} = \frac{5 \times 15}{8 \times 15} = \frac{75}{120} \; ; \quad \frac{3}{5} = \frac{3 \times 24}{5 \times 24} = \frac{72}{120} \; ;$$

$$\frac{2}{3} = \frac{2 \times 40}{3 \times 40} = \frac{80}{120} \; ; \quad \frac{3}{4} = \frac{3 \times 30}{4 \times 30} = \frac{90}{120}$$

Now, compare $\frac{75}{120}$; $\frac{72}{120}$; $\frac{80}{120}$; $\frac{90}{120}$

or, $72 < 75 < 80 < 90$

or, $\frac{75}{120} < \frac{72}{120} < \frac{80}{120} < \frac{90}{120}$

Arrange in ascending order $\frac{72}{120} < \frac{75}{120} < \frac{80}{120} < \frac{90}{120}$

2. a. $\mathbf{\frac{2}{15}}$, $\mathbf{\frac{9}{15}}$, $\mathbf{\frac{7}{15}}$, $\mathbf{\frac{3}{15}}$

All the fractions are like fractions. Arrange all the fractions in the descending order in their numerator as given below :

$$\frac{9}{15} > \frac{7}{15} > \frac{3}{15} > \frac{2}{15}$$

b. $\mathbf{\frac{1}{9}}$, $\mathbf{\frac{5}{9}}$, $\mathbf{\frac{3}{9}}$, $\mathbf{\frac{7}{9}}$

All the fractions are like fractions. Arrange all the fraction in descending order in their numerator is below :

$$\frac{7}{9} > \frac{5}{9} > \frac{3}{9} > \frac{1}{9}$$

c. $\mathbf{\frac{5}{11}}$, $\mathbf{\frac{1}{11}}$, $\mathbf{\frac{7}{11}}$, $\mathbf{\frac{12}{11}}$

All the fractions are like fractions arrange all the fraction in descending order in their numerator as below :

$$\frac{12}{11} > \frac{7}{11} > \frac{5}{11} > \frac{1}{11}$$

d. $\mathbf{\frac{4}{12}}$, $\mathbf{\frac{7}{12}}$, $\mathbf{\frac{5}{12}}$, $\mathbf{\frac{11}{12}}$

All the fractions are like fractions arrange all the fractions in descending order in their numerator as below :

$$\frac{11}{12} > \frac{7}{12} > \frac{5}{12} > \frac{4}{12}$$

e. $\frac{2}{19}$, $\frac{5}{19}$, $\frac{4}{19}$, $\frac{9}{19}$

All the fractions are like fractions arrange all the fractions in descending order in their numerator as below :

$$\frac{9}{19} > \frac{5}{19} > \frac{4}{19} > \frac{2}{19}$$

f. $\frac{2}{5}$, $\frac{1}{3}$, $\frac{7}{6}$, $\frac{1}{2}$

2	5, 3, 6, 2
3	5, 3, 3, 1
5	5, 1, 1, 1
	1, 1, 1, 1

All fraction is are unlike fractions.
We first we convert into like fractions.
LCM of 5, 3, 6 and 2 = 2 × 3 × 5 = 30

$$\frac{5}{8} = \frac{2 \times 6}{5 \times 6} = \frac{12}{30} \; ; \quad \frac{1}{3} = \frac{3 \times 10}{3 \times 10} = \frac{10}{30} \; ;$$

$$\frac{7}{6} = \frac{7 \times 5}{6 \times 5} = \frac{35}{30} \; ; \quad \frac{1}{2} = \frac{1 \times 15}{2 \times 15} = \frac{15}{30}$$

Now, compare $\frac{12}{30}$; $\frac{10}{35}$; $\frac{35}{30}$; $\frac{15}{30}$

$$35 > 15 > 12 > 10$$

Or $\frac{35}{30} > \frac{15}{30} > \frac{12}{30} > \frac{10}{30}$

Arrange in descending order $\frac{7}{6} > \frac{1}{2} > \frac{2}{5} > \frac{1}{3}$

Exercise 9.6

1. a. $\frac{2}{7} + \frac{1}{7} = \frac{2+1}{7} = \frac{3}{7}$

b. $\frac{1}{9} + \frac{5}{9} = \frac{1+5}{9} = \frac{6}{9}$ or $\frac{2}{3}$

c. $\frac{6}{11} + \frac{3}{11} = \frac{6+3}{11} = \frac{9}{11}$

d. $\frac{2}{12} + \frac{6}{12} = \frac{2+6}{12} = \frac{8}{12}$ or $\frac{4}{3}$

e. $\frac{1}{21} + \frac{1}{21} = \frac{1+1}{21} = \frac{2}{21}$

f. $\frac{6}{17} + \frac{7}{17} = \frac{6+7}{17} = \frac{13}{17}$

g. $\frac{5}{18} + \frac{3}{18} + \frac{2}{18} = \frac{5+3+2}{18} = \frac{10}{18}$ or $\frac{5}{9}$

h. $\frac{3}{7} + \frac{1}{7} + \frac{2}{7} = \frac{3+1+2}{7} = \frac{6}{7}$

i. $\frac{3}{11} + \frac{4}{11} + \frac{1}{11} = \frac{3+4+1}{11} = \frac{8}{11}$

j. $\frac{6}{25} + \frac{2}{25} + \frac{7}{25} = \frac{6+2+7}{25} = \frac{15}{25}$

k. $\frac{3}{41} + \frac{3}{41} + \frac{25}{41} = \frac{3+3+25}{41} = \frac{31}{41}$

l. $\frac{3}{23} + \frac{13}{23} + \frac{11}{23} = \frac{3+13+11}{23} = \frac{27}{23}$

2. a. $\frac{5}{7} + \frac{4}{7} = \frac{5+4}{7} = \frac{9}{7}$ or $1\frac{1}{7}$

b. $\frac{5}{9} + \frac{7}{9} = \frac{5+7}{9} = \frac{12}{9}$ or $1\frac{3}{9}$ or $1\frac{1}{3}$

c. $\frac{8}{12} + \frac{7}{12} = \frac{8+7}{12} = \frac{15}{12}$ or $1\frac{3}{12}$ or $1\frac{1}{4}$

d. $\frac{8}{13} + \frac{9}{13} = \frac{8+9}{13} = \frac{17}{13}$ or $1\frac{4}{13}$

e. $\frac{7}{8} + \frac{5}{8} = \frac{7+5}{8} = \frac{12}{8}$ or $1\frac{4}{8}$ or $1\frac{1}{2}$

f. $\frac{4}{5} + \frac{2}{5} = \frac{4+2}{5} = \frac{6}{5}$ or $1\frac{1}{5}$

g. $\frac{5}{6} + \frac{3}{6} = \frac{5+3}{6} = \frac{8}{6}$ or $1\frac{2}{6}$ or $1\frac{1}{3}$

h. $\frac{9}{14} + \frac{6}{14} = \frac{9+6}{14} = \frac{15}{14}$ or $1\frac{1}{14}$

i. $\frac{8}{13} + \frac{7}{13} = \frac{8+7}{13} = \frac{15}{13}$ or $1\frac{2}{13}$

j. $\frac{7}{8} + \frac{9}{16} = \frac{2\times 7+9}{16} = \frac{14+9}{16} = \frac{23}{16}$ or $1\frac{7}{16}$

k. $\frac{8}{16} + \frac{9}{16} = \frac{8+9}{16} = \frac{17}{16}$ or $1\frac{1}{16}$

l. $\frac{13}{17} + \frac{7}{17} = \frac{13+7}{17} = \frac{20}{17}$ or $1\frac{3}{17}$

3. a. $\frac{3}{8} + \frac{7}{8} = \frac{3+7}{8} = \frac{10}{8}$ or $\frac{5}{4}$ or $1\frac{1}{4}$

b. $\frac{19}{20} + \frac{3}{15} = \frac{3 \times 19 + 3 \times 4}{60} = \frac{69}{60}$ or $\frac{23}{20}$ or $1\frac{3}{20}$

c. $\frac{10}{14} + \frac{11}{14} = \frac{10 + 11}{14} = \frac{21}{14}$ or $\frac{3}{2}$ or $1\frac{1}{2}$

d. $\frac{6}{20} + \frac{19}{20} = \frac{6 + 19}{20} = \frac{25}{20}$ or $\frac{5}{4}$ or $1\frac{1}{4}$

e. $\frac{3}{9} + \frac{7}{9} = \frac{3 + 7}{9} = \frac{10}{9}$ or $1\frac{1}{9}$

f. $\frac{8}{20} + \frac{7}{20} + \frac{6}{20} = \frac{8 + 7 + 6}{20} = \frac{21}{20}$ or $1\frac{1}{20}$

g. $\frac{6}{8} + \frac{4}{8} + \frac{2}{8} = \frac{6 + 4 + 2}{8} = \frac{12}{8} = \frac{3}{2}$ or $1\frac{1}{2}$

h. $\frac{3}{9} + \frac{4}{8} + \frac{2}{8} = \frac{6 + 4 + 2}{8} = \frac{12}{8} = \frac{3}{2}$ or $1\frac{1}{2}$

i. $\frac{2}{12} + \frac{5}{12} + \frac{8}{12} = \frac{2 + 5 + 8}{12} = \frac{15}{12} = \frac{5}{4}$ or $1\frac{1}{4}$

j. $\frac{5}{20} + \frac{12}{20} + \frac{15}{20} = \frac{5 + 12 + 15}{20} = \frac{32}{20} = \frac{8}{5}$ or $1\frac{3}{5}$

k. $\frac{2}{6} + \frac{5}{6} + \frac{7}{6} = \frac{2 + 5 + 7}{6} = \frac{14}{6} = \frac{7}{3}$ or $2\frac{1}{3}$

l. $\frac{7}{17} + \frac{9}{17} + \frac{11}{17} = \frac{7 + 9 + 11}{17} = \frac{27}{17}$ or $1\frac{10}{17}$

Exercise 9.7

1. $3\frac{1}{4} + 2\frac{2}{3}$

Adding whole number and fraction separately

$$3\frac{1}{4} + 2\frac{2}{3} = 3 + 2 + \left(\frac{1}{4} + \frac{2}{3}\right)$$

(Converting fraction unlike into like fraction)

$$= 5 + \left(\frac{1 \times 3}{4 \times 3} + \frac{4 \times 2}{4 \times 3}\right)$$

$$= 5 + \left(\frac{3}{12} + \frac{8}{12}\right) = 5 + \left(\frac{3 + 8}{12}\right)$$

$$= 5 + \frac{11}{12} = 5\frac{11}{12}$$

2. $\mathbf{4\frac{1}{8} + 2\frac{1}{2}}$

Adding whole number and fraction separately.

$$4\frac{1}{8} + 2\frac{1}{2} = 4 + 2 + \left(\frac{1}{8} + \frac{1}{2}\right)$$

(Converting unlike fractions into like fractions)

$$= 6 + \left(\frac{1\times1}{8\times1} + \frac{1\times4}{2\times4}\right) = 6 + \left(\frac{1}{8} + \frac{4}{8}\right)$$

$$= 6 + \left(\frac{1+4}{8}\right) = 6 + \frac{5}{8} = 6\frac{5}{8}$$

3. $\mathbf{1\frac{1}{2} + 2\frac{2}{5}}$

Adding whole number and fraction separately.

$$1\frac{1}{2} + 2\frac{1}{5} = 1 + 2 + \left(\frac{1}{2} + \frac{1}{5}\right)$$

(Converting unlike fractions into like fractions)

$$= 3 + \left(\frac{1\times5}{2\times5} + \frac{2\times2}{2\times5}\right) = 3 + \left(\frac{5}{10} + \frac{4}{10}\right)$$

$$= 3 + \left(\frac{5+4}{10}\right) = 3 + \frac{9}{10} = 3\frac{9}{10}$$

4. $\mathbf{3\frac{1}{4} + 5\frac{3}{8}}$

Adding whole number and fraction separately.

$$3\frac{1}{4} + 5\frac{3}{8} = 3 + 5 + \left(\frac{1}{4} + \frac{3}{8}\right)$$

(Converting unlike fraction into like fraction)

$$= 8 + \left(\frac{1\times2}{4\times2} + \frac{3\times1}{8\times1}\right)$$

$$= 8 + \left(\frac{2}{8} + \frac{3}{8}\right) = 8 + \left(\frac{5+3}{8}\right)$$

$$= 8 + \frac{5}{8} = 8\frac{5}{8}$$

5. $6\frac{1}{9} + 7\frac{2}{3}$

Adding whole number and fraction separately.

$$6\frac{1}{9} + 7\frac{2}{3} = 6 + 7 + \left(\frac{1}{9} + \frac{2}{3}\right)$$

(Converting unlike fraction into like fraction)

$$= 13 + \left(\frac{1\times 1}{9\times 1} + \frac{2\times 3}{3\times 3}\right) = 13 + \left(\frac{1}{9} + \frac{6}{9}\right)$$

$$= 13 + \left(\frac{1+6}{9}\right) = 13 + \frac{7}{9} = 13\frac{7}{9}$$

6. $5\frac{1}{5} + 6\frac{1}{6}$

Adding whole number and fraction separately.

$$5\frac{1}{5} + 6\frac{1}{6} = 5 + 6 + \left(\frac{1}{5} + \frac{1}{6}\right)$$

(Converting unlike fraction into like fraction)

$$= 11 + \left(\frac{1\times 6}{5\times 6} + \frac{1\times 5}{6\times 5}\right) = 11 + \left(\frac{6}{30} + \frac{5}{30}\right)$$

$$= 11 + \left(\frac{6+5}{30}\right) = 11 + \frac{11}{30} = 11\frac{11}{30}$$

7. $7\frac{1}{3} + 1\frac{1}{2}$

Adding whole number and fraction separately.

$$7\frac{1}{3} + 1\frac{1}{2} = 7 + 1 + \left(\frac{1}{3} + \frac{1}{2}\right)$$

(Converting unlike fraction into like fraction)

$$= 8 + \left(\frac{1\times 2}{3\times 2} + \frac{1\times 3}{2\times 3}\right)$$

$$= 8 + \left(\frac{2}{6} + \frac{3}{6}\right)$$

$$= 8 + \left(\frac{2+3}{6}\right) = 8 + \frac{5}{6} = 8\frac{5}{6}$$

8. $\mathbf{5\frac{1}{4} + 1\frac{1}{8}}$

Adding whole number and fraction separately.

$$5\frac{1}{4} + 1\frac{1}{8} = 5 + 1 + \left(\frac{1}{4} + \frac{1}{8}\right)$$

(Converting unlike fraction into like fraction)

$$= 6 + \left(\frac{1\times 2}{4\times 2} + \frac{1\times 1}{8\times 1}\right) = 6 + \left(\frac{2}{8} + \frac{1}{8}\right)$$

$$= 6 + \left(\frac{2+1}{8}\right) = 6 + \frac{3}{8} = 6\frac{3}{8}$$

9. $\mathbf{2\frac{1}{12} + 1\frac{1}{4}}$

Adding whole number and fraction separately.

$$2\frac{1}{12} + 1\frac{1}{4} = 2 + 1 + \left(\frac{1}{12} + \frac{1}{4}\right)$$

(Converting unlike fraction into like fraction)

$$= 3 + \left(\frac{1\times 1}{12\times 1} + \frac{1\times 3}{4\times 3}\right) = 3 + \left(\frac{1}{12} + \frac{3}{12}\right)$$

$$= 3 + \left(\frac{1+3}{12}\right) = 3 + \frac{4}{12} = 3\frac{1}{3}$$

10. $\mathbf{2\frac{1}{4} + 1\frac{7}{8}}$

Adding whole number and fraction separately.

$$2\frac{1}{4} + 1\frac{7}{8} = 2 + 1 + \left(\frac{1}{4} + \frac{7}{8}\right)$$

(Converting unlike fraction into like fraction)

$$= 3 + \left(\frac{1\times 2}{4\times 2} + \frac{7}{8}\right)$$

$$= 3 + \left(\frac{2}{8} + \frac{7}{8}\right) = 3 + \left(\frac{2+7}{8}\right)$$

$$= 3 + \frac{9}{8} = 3 + 1\frac{1}{8} = 4 + \frac{1}{8}$$

11. $\mathbf{2\frac{1}{4} + 3\frac{2}{5} + 1\frac{7}{20}}$

Adding whole number and fractional number separately.

$$2\frac{1}{4} + 3\frac{2}{5} + 1\frac{7}{20} = 2 + 3 + 1 + \left(\frac{1}{4} + \frac{2}{5} + \frac{7}{20}\right)$$

(Converting unlike fraction into like fraction)

$$= 6 + \left(\frac{1\times5}{4\times5} + \frac{2\times4}{5\times4} + \frac{7\times1}{20\times1}\right)$$

$$= 6 + \left(\frac{5}{20} + \frac{8}{20} + \frac{7}{20}\right)$$

$$= 6 + \left(\frac{5+8+7}{20}\right)$$

$$= 6 + \frac{20}{20} = 6 + 1 = 7$$

12. $\mathbf{1\frac{2}{7} + 3\frac{5}{14} + 2\frac{1}{21}}$

Adding whole number and fractional number separately.

$$1\frac{2}{7} + 3\frac{5}{14} + 2\frac{1}{21} = 1 + 3 + 2 + \left(\frac{2}{7} + \frac{5}{14} + \frac{1}{21}\right)$$

(Converting unlike fraction into like fraction)

$$= 6 + \left(\frac{2\times6}{7\times6} + \frac{5\times3}{14\times3} + \frac{1\times2}{21\times2}\right)$$

$$= 6 + \left(\frac{12}{42} + \frac{15}{42} + \frac{2}{42}\right)$$

$$= 6 + \left(\frac{12+15+2}{42}\right)$$

$$= 6 + \frac{29}{42} = 6\frac{29}{42}$$

13. $\mathbf{3\frac{1}{15} + 5\frac{2}{5}}$

Adding whole number and fraction number separately.

$$3\frac{1}{15} + 5\frac{2}{5} = 3 + 5 + \left(\frac{1}{15} + \frac{2}{5}\right)$$

(Converting unlike fraction into like fraction)

$$= 8 + \left(\frac{2\times3}{5\times3} + \frac{1}{15}\right) = 8 + \left(\frac{1}{15} + \frac{6}{15}\right)$$

$$= 8 + \left(\frac{1+6}{15}\right) = 8 + \frac{7}{15} = 8\,\frac{7}{15}$$

14. $\mathbf{7\,\frac{2}{5} + 1\,\frac{7}{30}}$

Adding whole number and fractional number separately.

$$7\,\frac{2}{5} + 1\,\frac{7}{30} = 7 + 1 + \left(\frac{2}{5} + \frac{7}{30}\right)$$

(Converting unlike fraction into like fraction)

$$= 8 + \left(\frac{2\times6}{5\times6} + \frac{7}{30}\right) = 8 + \left(\frac{12}{30} + \frac{7}{30}\right)$$

$$= 8 + \left(\frac{12+7}{30}\right) = 8 + \frac{19}{30} = 8\,\frac{19}{30}$$

15. $\mathbf{3\,\frac{1}{2} + 5\,\frac{3}{4}}$

Adding whole number and fraction number separately.

$$3\,\frac{1}{2} + 5\,\frac{3}{4} = 3 + 5 + \left(\frac{1}{2} + \frac{3}{4}\right)$$

(Converting unlike fraction into like fraction)

$$= 8 + \left(\frac{1\times2}{2\times2} + \frac{3}{4}\right) = 8 + \left(\frac{2}{4} + \frac{3}{4}\right)$$

$$= 8 + \left(\frac{2+3}{4}\right) = 8 + \frac{5}{4}$$

$$= 8 + 1 + \frac{1}{4} = 9 + \frac{1}{5}$$

16. $\mathbf{6\,\frac{3}{5} + 3\,\frac{1}{2} + 2\,\frac{3}{10}}$

Adding whole number and fractional number separately.

$$6\,\frac{3}{5} + 3\,\frac{1}{2} + 2\,\frac{3}{10} = 6 + 3 + 2 + \left(\frac{3}{5} + \frac{1}{2} + \frac{3}{10}\right)$$

(Converting unlike fraction into like fraction)

$$= 11 + \left(\frac{3\times 2}{5\times 2} + \frac{1\times 5}{2\times 5} + \frac{3}{10}\right)$$

$$= 11 + \left(\frac{6}{10} + \frac{5}{10} + \frac{3}{10}\right) = 11 + \left(\frac{6+5+3}{10}\right)$$

$$= 11 + \frac{14}{10} = 11 + 1 + \frac{4}{10} = 12\frac{4}{10} \text{ or } 12\frac{2}{5}$$

17. $\mathbf{8\frac{3}{4} + 2\frac{7}{10}}$

Adding whole number and fraction number separately.

$$8\frac{3}{4} + 2\frac{7}{10} = 8 + 2 + \left(\frac{3}{4} + \frac{7}{10}\right)$$

(Converting unlike fraction into like fraction)

$$= 10 + \left(\frac{3\times 5}{4\times 5} + \frac{7\times 2}{10\times 2}\right)$$

$$= 10 + \left(\frac{15}{20} + \frac{14}{20}\right) = 10 + \frac{29}{20}$$

$$= 10 + 1\frac{9}{20} = (10+1) + \frac{9}{20} = 11\frac{9}{20}$$

18. $\mathbf{7\frac{8}{9} + 2\frac{5}{6} + 8\frac{2}{3}}$

Adding whole number and fraction number separately.

$$7\frac{8}{9} + 2\frac{5}{6} + 8\frac{2}{3} = 7 + 2 + 8 + \left(\frac{8}{9} + \frac{5}{6} + \frac{2}{3}\right)$$

(Converting unlike fraction into like fraction)

$$= 17 + \left(\frac{8\times 2}{9\times 2} + \frac{5\times 3}{6\times 3} + \frac{2\times 6}{3\times 6}\right)$$

$$= 17 + \left(\frac{16}{18} + \frac{15}{18} + \frac{12}{18}\right) = 17 + \left(\frac{16+15+12}{18}\right)$$

$$= 17 + \frac{43}{18} = 17 + 2\frac{7}{18} = 19\frac{7}{18}$$

Exercise 9.8

1. $2\frac{2}{7} + 3\frac{4}{14}$

$= \frac{16}{7} + \frac{46}{14}$ ($\therefore$ LCM of 7 and 14 = 14)

$= \left(\frac{16 \times 2}{7 \times 2} + \frac{46}{14}\right)$

$= \frac{32}{14} + \frac{46}{14} = \frac{32 + 46}{14} = \frac{78}{14}$ or $\frac{39}{7}$ or $5\frac{4}{7}$

2. $2\frac{1}{4} + 3\frac{1}{6}$

$= \frac{9}{4} + \frac{19}{6}$ ($\therefore$ LCM of 4 and 6 = 12)

$= \left(\frac{9 \times 3}{4 \times 3} + \frac{19 \times 2}{6 \times 2}\right)$

$= \frac{27}{12} + \frac{38}{12} = \frac{27 + 38}{12} = \frac{65}{12}$ or $5\frac{5}{12}$

3. $2\frac{2}{7} + 2\frac{1}{7} + 1\frac{3}{7}$

$= \frac{16}{7} + \frac{15}{7} + \frac{10}{7}$

$= \left(\frac{16 + 15 + 10}{7}\right) = \frac{41}{7}$ or $5\frac{6}{7}$

4. $2\frac{7}{12} + 3\frac{1}{12} + 4\frac{1}{12}$

$= \frac{31}{12} + \frac{37}{12} + \frac{49}{12}$

$= \left(\frac{31 + 37 + 49}{12}\right) = \frac{117}{12}$ or $9\frac{9}{12}$ or $9\frac{3}{4}$

5. $5\frac{2}{7} + 3\frac{1}{7} + 6\frac{3}{7}$

$= \frac{37}{7} + \frac{22}{7} + \frac{45}{7}$

$= \left(\frac{37 + 22 + 45}{7}\right) = \frac{104}{7}$ or $14\frac{6}{7}$

6. $\mathbf{1\frac{6}{16} + 2\frac{7}{24} + 1\frac{3}{8}}$

$= \frac{22}{16} + \frac{55}{24} + \frac{11}{8}$ ($\therefore$ LCM of 6, 24 and 8 = 48)

$= \left(\frac{22 \times 3}{16 \times 3} + \frac{55 \times 2}{24 \times 2} + \frac{11 \times 6}{8 \times 6}\right)$

$= \frac{66}{48} + \frac{110}{48} + \frac{66}{48} = \frac{66 + 110 + 66}{48} = \frac{242}{48}$ or $\frac{121}{24}$ or $5\frac{1}{24}$

7. $\mathbf{7\frac{3}{10} + 17\frac{5}{12}}$

$= \frac{73}{10} + \frac{209}{12}$ ($\therefore$ LCM of 10 and 12 = 60)

$= \left(\frac{73 \times 6}{10 \times 6} + \frac{209 \times 5}{12 \times 5}\right)$

$= \frac{438}{60} + \frac{1045}{60} = \frac{438 + 1045}{60} = \frac{1483}{60}$ or $24\frac{43}{60}$

8. $\mathbf{13\frac{1}{8} + 5\frac{3}{4}}$

$= \frac{105}{8} + \frac{23}{4}$ ($\therefore$ LCM of 8 and 4 = 8)

$= \left(\frac{105}{8} + \frac{23 \times 2}{4 \times 2}\right)$

$= \frac{105}{8} + \frac{46}{8} = \frac{105 + 46}{8} = \frac{151}{8}$ or $18\frac{7}{8}$

9. $\mathbf{5\frac{1}{5} + 8\frac{2}{15}}$

$= \frac{26}{5} + \frac{122}{15}$ ($\therefore$ LCM of 5 and 15 = 15)

$= \left(\frac{26 \times 3}{5 \times 3} + \frac{122}{15}\right)$

$= \frac{78}{15} + \frac{122}{15} = \frac{78 + 122}{15} = \frac{200}{15} = \frac{40}{3}$ or $13\frac{1}{3}$

10. $9\frac{2}{7} + 9\frac{5}{7}$

$= \frac{65}{7} + \frac{68}{7} = \frac{65+68}{7} = \frac{133}{7}$ or 19

11. $3\frac{1}{15} + 11\frac{1}{3} + 16\frac{2}{3}$

$= \frac{46}{15} + \frac{34}{3} + \frac{50}{3}$ ($\therefore$ LCM of 15, 3 and 3 = 15)

$= \left(\frac{46}{15} + \frac{34\times5}{3\times5} + \frac{50\times5}{3\times5}\right)$

$= \frac{46}{15} + \frac{170}{15} + \frac{250}{15} = \frac{46+170+250}{15} = \frac{466}{15}$ or $31\frac{1}{5}$

12. $2\frac{1}{2} + 1\frac{3}{5} + 4\frac{7}{10}$

$= \frac{5}{2} + \frac{8}{5} + \frac{47}{10}$ ($\therefore$ LCM of 2, 5 and 10 = 10)

$= \left(\frac{5\times5}{2\times5} + \frac{8\times2}{5\times2} + \frac{47}{10}\right)$

$= \frac{25}{10} + \frac{16}{10} + \frac{47}{10} = \frac{25+16+47}{10} = \frac{88}{10}$ or $8\frac{8}{10}$ or $8\frac{4}{5}$

13. $3\frac{1}{12} + 5\frac{1}{6} + 4\frac{1}{9}$

$= \frac{37}{12} + \frac{31}{6} + \frac{37}{9}$ ($\therefore$ LCM of 12, 6 and 9 = 36)

$= \left(\frac{37\times3}{12\times3} + \frac{31\times6}{6\times6} + \frac{37\times4}{9\times4}\right)$

$= \frac{111}{36} + \frac{186}{36} + \frac{148}{36} = \frac{111+186+148}{36} = \frac{445}{36}$ or $12\frac{13}{36}$

14. $9\frac{1}{4} + \frac{7}{6}$

$= \frac{37}{4} + \frac{7}{6}$ ($\therefore$ LCM of 4 and 6 = 12)

$= \left(\frac{37 \times 3}{4 \times 3} + \frac{7 \times 2}{6 \times 2} \right)$

$= \frac{111}{12} + \frac{14}{12} = \frac{111 + 14}{12} = \frac{125}{12}$ or $10\frac{5}{12}$

15. $\mathbf{2\frac{1}{2} + 3\frac{2}{3} + 4\frac{1}{6}}$

$= \frac{7}{2} + \frac{11}{3} + \frac{25}{6}$ ($\therefore$ LCM of 2, 3 and 6 = 6)

$= \left(\frac{7 \times 3}{2 \times 3} + \frac{11 \times 2}{3 \times 2} + \frac{25}{6} \right)$

$= \frac{21}{6} + \frac{22}{6} + \frac{25}{6} = \frac{21 + 22 + 25}{6} = \frac{68}{6}$ or $11\frac{2}{6}$ or $10\frac{1}{3}$

16. $\mathbf{2\frac{10}{17} + 3\frac{11}{17}}$

$= \frac{44}{17} + \frac{62}{17} = \frac{44 + 62}{17} = \frac{106}{17}$ or $6\frac{4}{17}$

17. $\mathbf{1\frac{5}{9} + 2\frac{7}{12} + \frac{3}{4}}$

$= \frac{14}{9} + \frac{31}{12} + \frac{3}{4}$ ($\therefore$ LCM of 9, 12 and 4 = 36)

$= \left(\frac{14 \times 4}{9 \times 4} + \frac{31 \times 3}{12 \times 3} + \frac{3 \times 9}{4 \times 9} \right)$

$= \frac{56}{36} + \frac{93}{36} + \frac{27}{36} = \frac{56 + 93 + 27}{36} = \frac{176}{36}$ or $4\frac{32}{36}$ or $4\frac{8}{9}$

18. $\mathbf{5\frac{5}{8} + 6\frac{13}{24} + 7\frac{4}{16}}$

$= \frac{45}{8} + \frac{157}{24} + \frac{116}{16}$ ($\therefore$ LCM of 8, 24 and 16 = 48)

$= \left(\frac{45 \times 6}{48 \times 6} + \frac{157 \times 2}{24 \times 2} + \frac{116 \times 3}{16 \times 3} \right)$

$= \frac{270}{48} + \frac{314}{48} + \frac{348}{48} = \frac{270 + 314 + 348}{48} = \frac{932}{48}$ or $\frac{233}{12}$ or $19\frac{5}{12}$

19. $7\frac{5}{6} + 6\frac{13}{24} + 5\frac{1}{16}$

$= \frac{47}{6} + \frac{157}{24} + \frac{81}{16}$ ($\therefore$ LCM of 6, 24 and 16 = 48)

$= \left(\frac{47 \times 8}{6 \times 8} + \frac{157 \times 2}{24 \times 2} + \frac{81 \times 3}{16 \times 3}\right)$

$= \frac{376}{48} + \frac{314}{48} + \frac{243}{48} = \frac{376 + 314 + 243}{48} = \frac{933}{48}$ or $\frac{311}{16}$ or $19\frac{7}{16}$

20. $5\frac{5}{7} + 1\frac{1}{18}$

$= \frac{40}{7} + \frac{19}{18}$ ($\therefore$ LCM of 7 and 18 = 126)

$= \left(\frac{40 \times 18}{7 \times 18} + \frac{19 \times 7}{18 \times 7}\right)$

$= \frac{720}{126} + \frac{133}{126} = \frac{720 + 133}{126} = \frac{853}{126}$ or $6\frac{97}{126}$

Exercise 9.9

1. a. $\frac{5}{7} - \frac{2}{7}$

$= \frac{5-2}{7} = \frac{3}{7}$

b. $\frac{12}{14} - \frac{7}{14}$

$= \frac{12-7}{14} = \frac{5}{14}$

c. $\frac{4}{9} - \frac{2}{9}$

$= \frac{4-2}{9} = \frac{2}{9}$

d. $\frac{11}{12} - \frac{7}{12}$

$= \frac{11-7}{12} = \frac{4}{12}$ or $\frac{1}{3}$

e. $\frac{4}{5} - \frac{2}{5}$

$= \frac{4-2}{5} = \frac{2}{5}$

f. $\frac{4}{6} - \frac{3}{6}$

$= \frac{4-3}{6} = \frac{1}{6}$

g. $\frac{2}{3} - \frac{1}{3}$

$= \frac{2-1}{3} = \frac{1}{3}$

h. $\frac{7}{11} - \frac{3}{11}$

$= \frac{7-3}{11} = \frac{4}{11}$

i. $\frac{8}{15} - \frac{6}{15}$

$= \frac{8-6}{15} = \frac{2}{15}$

j. $\frac{3}{16} - \frac{1}{16}$

$= \frac{3-1}{16} = \frac{2}{16}$ or $\frac{1}{8}$

k. $\frac{5}{11} - \frac{3}{11}$

$= \frac{5-3}{11} = \frac{2}{11}$

l. $\frac{11}{15} - \frac{7}{15}$

$= \frac{11-7}{15} = \frac{4}{15}$

2. a. $\frac{5}{9} - \frac{2}{9} = \frac{3}{9}$ b. $\frac{9}{16} - \frac{4}{16} = \frac{5}{16}$ c. $\frac{17}{23} - \frac{7}{23} = \frac{10}{23}$

d. $\frac{12}{18} - \frac{7}{18} = \frac{5}{18}$ e. $\frac{16}{21} - \frac{15}{21} = \frac{1}{21}$ f. $\frac{34}{35} - \frac{24}{35} = \frac{10}{35}$

g. $\frac{7}{35} - \frac{3}{35} = \frac{4}{35}$ h. $\frac{9}{29} - \frac{5}{29} = \frac{4}{29}$ i. $\frac{23}{31} - \frac{3}{31} = \frac{20}{31}$

j. $\frac{30}{37} - \frac{15}{37} = \frac{15}{37}$ k. $\frac{12}{39} - \frac{5}{39} = \frac{7}{39}$ l. $\frac{27}{40} - \frac{17}{40} = \frac{10}{40}$

Exercise 9.10

1. $\frac{7}{10} - \frac{2}{5}$

(LCM of denominator 10 and 5 = 10)

$= \frac{(7 \times 1) - (2 \times 2)}{10} = \frac{7-4}{10} = \frac{3}{10}$

2. $\frac{5}{16} - \frac{7}{24}$

(LCM of denominator 16 and 24 = 48)

$= \frac{(5 \times 3) - (7 \times 2)}{48} = \frac{15-14}{48} = \frac{1}{48}$

3. $\frac{7}{15} - \frac{3}{20}$

(LCM of denominator 15 and 20 = 60)

$= \frac{(7 \times 4) - (3 \times 3)}{60} = \frac{28-9}{60} = \frac{19}{60}$

4. $\frac{5}{6} - \frac{1}{8}$

(LCM of denominator 6 and 8 = 24)

$= \frac{(5 \times 4) - (1 \times 3)}{24} = \frac{20-3}{24} = \frac{17}{24}$

5. $\frac{5}{6} - \frac{2}{3}$

(LCM of denominator 6 and 3 = 6)

$= \frac{(5 \times 1) - (2 \times 2)}{6} = \frac{5-4}{6} = \frac{1}{6}$

6. $\frac{1}{4} - \frac{1}{8}$

(LCM of denominator 4 and 8 = 8)

$= \frac{(1 \times 2) - 1}{8} = \frac{2-1}{8} = \frac{1}{8}$

7. $\frac{9}{15} - \frac{3}{10}$

(LCM of denominator 15 and 19 = 30)

$= \frac{(9 \times 2) - (3 \times 3)}{30} = \frac{18-9}{30} = \frac{9}{30}$ or $\frac{3}{10}$

8. $\frac{5}{6} - \frac{7}{12}$

(LCM of denominator 6 and 12 = 12)

$= \frac{(5 \times 2) - (7 \times 1)}{12} = \frac{10-7}{12} = \frac{3}{12}$ or $\frac{1}{4}$

9. $\frac{5}{9} - \frac{1}{2}$

(LCM of 9 and 2 = 18)

$= \frac{(5 \times 2) - (1 \times 9)}{18} = \frac{10-9}{18} = \frac{1}{18}$

10. $\frac{9}{10} - \frac{1}{4}$

(LCM of 10 and 4 = 20)

$= \frac{(9 \times 2) - (4 \times 5)}{20} = \frac{18-5}{20} = \frac{13}{20}$

11. $\frac{9}{16} - \frac{11}{24}$

(LCM of 16 and 24 = 48)

$= \frac{(9 \times 3) - (11 \times 2)}{48} = \frac{27-22}{48} = \frac{5}{48}$

12. $\frac{8}{15} - \frac{7}{20}$

(LCM of 15 and 20 = 60)

$= \frac{(8 \times 4) - (7 \times 3)}{60} = \frac{32-21}{60} = \frac{11}{60}$

Exercise 9.11

All the questions can be solved by both the methods.
(Subtracting whole number and
fractional number separately).

1. $2\frac{3}{4} - 1\frac{2}{4}$

$= (2 - 1) + \left(\frac{3}{4} - \frac{2}{4}\right)$

$= 1 + \left(\frac{3 - 2}{4}\right)$

$= 1 + \frac{1}{4} = 1\frac{1}{4}$

Or

$2\frac{3}{4} - 1\frac{2}{4}$

$= \frac{11}{4} - \frac{6}{4}$

$= \frac{11 - 6}{4}$

$= \frac{5}{4}$ or $1\frac{1}{4}$

2. $3\frac{1}{8} - 1\frac{1}{8}$

(Subtracting whole number and fractions number separately).

$= (3 - 1) + \left(\frac{1}{8} - \frac{1}{8}\right) = 2 + 0 = 2$

3. $6\frac{7}{8} - 2\frac{3}{8}$

(Subtracting whole number and fractional number separately).

$= (6 - 2) + \left(\frac{7}{3} - \frac{3}{8}\right) = 4 + \left(\frac{7 - 3}{8}\right)$

$= 4 + \frac{4}{8} = 4 + \frac{1}{2} = 4\frac{1}{2}$

4. $3\frac{2}{3} - 1\frac{1}{3}$

(Subtracting whole number and fractional number separately)

$= (3 - 1) + \left(\frac{2}{3} - \frac{1}{3}\right) = 2 + \left(\frac{2 - 1}{3}\right) = 2 + \frac{1}{3} = 2\frac{1}{3}$

5. $11\frac{7}{6} - 1\frac{1}{6}$

(Subtracting whole number and fractional number separately)

$= (11 - 1) + \left(\frac{7}{6} - \frac{1}{6}\right) = 10 + \left(\frac{7 - 1}{6}\right)$

$= 10 + \frac{6}{6} = 10 + 1 = 11$

6. $3\frac{1}{4} - 1\frac{3}{8}$

$= \frac{13}{4} - \frac{11}{8} = \frac{(13 \times 2) - (11 \times 1)}{8}$

(By taking LCM of 4 and 8)

$= \frac{26 - 11}{8} = \frac{15}{8}$ or $1\frac{7}{8}$

Or

(Subtracting whole number and fractional number separately.)

$= (3 - 1) + \left(\frac{1}{4} - \frac{3}{8}\right) = 2 + \left(\frac{1 \times 2 - 3}{8}\right)$

(By taking the LCM of 4 and 8 = 8)

$= 2 + \left(\frac{2 - 3}{8}\right) = 2 + \frac{1}{8} = 2\frac{1}{8}$

7. $3\frac{4}{5} - 1\frac{2}{3}$

$= \frac{19}{5} - \frac{5}{3} = \frac{(19 \times 3) - (3 \times 5)}{15}$

(By taking the LCM of 5 and 3 = 15)

$= \frac{57 - 15}{15} = \frac{42}{15}$ or $2\frac{12}{15}$

8. $2\frac{3}{4} - 2\frac{1}{6}$

$= \frac{11}{4} - \frac{13}{6} = \frac{(11 \times 3) - (13 \times 2)}{12}$

(By taking the LCM of 4 and 6 = 12)

$= \frac{33 - 26}{12} = \frac{7}{12}$

9. $4\frac{3}{4} - 2\frac{1}{2}$

$= \frac{19}{4} - \frac{5}{2} = \frac{19 - (5 \times 2)}{4}$

(By taking the LCM of 4 and 2 = 4)

$= \frac{19 - 10}{4} = \frac{9}{4}$ or $2\frac{1}{4}$

10. $5\frac{2}{5} - 3\frac{3}{10}$

$= \frac{27}{5} - \frac{33}{10} = \frac{(27 \times 2) - 33}{10}$

(By taking the LCM of 5 and 10 = 10)

$= \frac{54 - 33}{10} = \frac{21}{10}$ or $2\frac{1}{10}$

11. $4\frac{7}{8} - 1\frac{11}{24}$

$= \frac{39}{8} - \frac{35}{24} = \frac{(39 \times 3) - 35}{24}$

(By taking the LCM of 8 and 24 = 24)

$= \frac{117 - 35}{24} = \frac{82}{24}$ or $\frac{41}{12}$ or $3\frac{5}{12}$

12. $3\frac{2}{9} - 2\frac{1}{6}$

$= \frac{29}{9} - \frac{13}{6} = \frac{(29 \times 2) - (13 \times 3)}{18}$

(By taking LCM of 9 and 6 = 18)

$= \frac{58 - 39}{18} = \frac{19}{18}$ or $1\frac{1}{18}$

13. $5\frac{5}{7} - 2\frac{4}{7}$

$= \frac{40}{7} - \frac{18}{7} = \frac{40 - 18}{17} = \frac{22}{17}$ or $1\frac{5}{17}$

14. $8\frac{3}{4} - 4\frac{2}{4}$

$= \frac{35}{4} - \frac{18}{4} = \frac{35 - 18}{4} = \frac{17}{4}$ or $4\frac{1}{4}$

15. $2\frac{1}{2} - 1\frac{3}{4}$

$= \frac{5}{2} - \frac{7}{4} = \frac{(5 \times 2) - 7}{4}$

(By taking LCM of 2 and 4)

$= \frac{10 - 7}{4} = \frac{3}{4}$

Exercise 9.12

1. $\frac{3}{8} + \frac{2}{8} - \frac{2}{8}$

$= \frac{3+2-1}{8} = \frac{5-1}{8} = \frac{4}{8}$ or $\frac{1}{2}$

2. $\frac{6}{13} + \frac{5}{13} - \frac{5}{13}$

$= \frac{6+5-5}{13} = \frac{11-5}{13} = \frac{6}{13}$

3. $\frac{11}{17} - \frac{8}{17} + \frac{3}{17}$

$= \frac{11-8+3}{17} = \frac{11+3-8}{17} = \frac{14-8}{17} = \frac{6}{17}$

4. $\frac{8}{9} - \frac{4}{9} + \frac{5}{9}$

$= \frac{8+4-5}{9} = \frac{12-5}{9} = \frac{7}{9}$

5. $\frac{5}{6} - \frac{3}{4} + \frac{5}{8}$

$= \frac{(5\times4)-(3\times6)+(5\times3)}{24}$ (By taking LCM of 6, 4 and 8 = 24)

$= \frac{20-18+15}{24} = \frac{35-18}{24} = \frac{17}{24}$

6. $\frac{1}{2} + \frac{7}{8} - \frac{3}{4}$

$= \frac{(2\times4)+(7\times1)-(3\times2)}{8}$ (By taking LCM of 2, 8 and 4 = 8)

$= \frac{8+7-6}{8} = \frac{15-6}{8} = \frac{9}{8}$

7. $\frac{7}{8} + 5 - \frac{5}{6} = \frac{7}{8} + \frac{5}{1} - \frac{5}{6}$

$= \frac{(7\times3)+(5\times24)+(5\times4)}{24}$ (By taking LCM of 8, 6, 1 = 24)

$= \frac{21+120-20}{24} = \frac{141-20}{24} = \frac{121}{24} = 5\frac{1}{24}$

8. $\frac{5}{12} - \frac{5}{6} + \frac{5}{8}$

$= \frac{(5 \times 2) - (5 \times 4) + (5 \times 3)}{24}$ (By taking LCM of 12, 6, 8 = 24)

$= \frac{10 - 20 + 15}{24} = \frac{10 + 15 - 20}{24} = \frac{25 - 20}{24} = \frac{15}{24}$

9. $2\frac{1}{6} + 3\frac{1}{3} - 4\frac{1}{4}$

$= \frac{13}{6} + \frac{10}{3} - \frac{17}{4}$

$= \frac{(13 \times 2) + (10 \times 4) - (17 \times 3)}{12}$ (By taking LCM of 6, 3, 4 = 12)

$= \frac{26 + 40 - 51}{12} = \frac{66 - 51}{12} = \frac{15}{12} = 1\frac{3}{12}$ or $1\frac{1}{4}$

10. $6\frac{1}{2} + 3\frac{1}{4} - 5\frac{1}{3}$

$= \frac{13}{2} + \frac{13}{4} - \frac{16}{3}$

$= \frac{(13 \times 6) + (13 \times 3) - (16 \times 4)}{12}$ (By taking LCM of 2, 4 and 3 = 12)

$= \frac{78 + 39 - 64}{12} = \frac{117 - 64}{12} = \frac{53}{12}$ or $4\frac{5}{12}$

11. $1\frac{3}{4} + 3\frac{1}{2} + 1\frac{1}{8}$

$= \frac{7}{4} + \frac{7}{2} + \frac{9}{8}$

$= \frac{(7 \times 2) + (7 \times 4) + (9 \times 1)}{8}$ (By taking LCM of 4, 2 and 8 = 8)

$= \frac{14 + 28 + 9}{8} = \frac{51}{8}$ or $6\frac{3}{8}$

12. $5\frac{1}{8} + 3\frac{5}{6} - 1\frac{1}{2}$

$= \frac{41}{8} + \frac{23}{6} - \frac{3}{2}$

$= \dfrac{(41 \times 3) + (23 \times 4) - (3 \times 12)}{12}$ (Taking LCM of 8, 6 and 2 = 24)

$= \dfrac{123 + 92 - 36}{24} = \dfrac{215 - 36}{24} = \dfrac{179}{24}$ or $7\dfrac{11}{24}$

Exercise 9.13

1. Number of chocolate = 1

Chocolate given to one friend = $\dfrac{3}{8}$

Chocolate given to another friend = $\dfrac{1}{2}$

Total chocolate given to friends = $\dfrac{3}{8} + \dfrac{1}{2}$

$= \dfrac{3 + (2 \times 2)}{8}$

$= \dfrac{3+4}{8} = \dfrac{7}{8}$

The chocolate left with him = $1 - \dfrac{7}{8}$

$= \dfrac{8-7}{8} = \dfrac{1}{8}$

Thus, $\dfrac{1}{8}$ chocolate is left with him.

2. Required number = $5\dfrac{5}{12} - 2\dfrac{4}{9}$

$= \dfrac{65}{12} - \dfrac{22}{9}$

$= \dfrac{(65 \times 3) - (22 \times 4)}{36}$ (LCM of 12 and 9 = 36)

$= \dfrac{195 - 88}{36} = \dfrac{107}{36}$ or $2\dfrac{35}{36}$

Thus, required number is $2\dfrac{35}{36}$.

3. Total apples = 4

Number of friends = 3

Fraction of Apples given to each friends = $\dfrac{1}{2}$

Total apples given $= \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$

$= \frac{1+1+1}{2} = \frac{3}{2}$

Apples remain $= 4 - \frac{3}{2} = \frac{(4 \times 2) - 3}{2}$

$= \frac{8-3}{2} = \frac{5}{2}$ or $2\frac{1}{2}$

Thus, $2\frac{1}{2}$ Apples are remained.

4. Total quantity of flour $= 9\frac{1}{4}$ kg or $\frac{37}{4}$ kg

Quantity of flour used $= 3\frac{5}{8}$ kg or $\frac{29}{8}$ kg

Quantity of four left $= \left(\frac{37}{4} - \frac{29}{8}\right)$ kg

$= \frac{(37 \times 2) - 29}{8}$ kg

$= \frac{74 - 29}{8}$ kg $= \frac{45}{8}$ kg or $5\frac{5}{8}$ kg

Thus, quantity of flour left is $5\frac{5}{8}$ kg.

5. Part of a work completed by Vaishali $= \frac{8}{35}$

Part of a work completed by Tanu $= \frac{11}{35}$

Comparing the both work $= \frac{8}{35} < \frac{11}{35}$

Difference $= \frac{11}{35} - \frac{8}{35}$

$= \frac{11-8}{35} = \frac{3}{35}$

Thus Tanu completed more $\frac{3}{35}$ part of work.

6. Required number $= \frac{10}{11} - \frac{3}{11}$

$= \frac{10-3}{11} = \frac{7}{11}$

7. Part of property given by son $= \frac{3}{10}$

Part of property given to daughter $= \frac{1}{10}$

Comparing the both parts $= \frac{3}{10} > \frac{1}{10}$

Difference $= \frac{3}{10} - \frac{1}{10} = \frac{3-1}{10} = \frac{2}{10}$ or $\frac{1}{5}$

Thus, the son was given $\frac{1}{5}$ of the property more.

8. Total quantity of wheat $=$ 100 kg

Quantity of wheat sold $= 54\ \frac{3}{4}$ kg $= \frac{219}{4}$ kg

Quantity of wheat left $= \frac{100}{1} - \frac{219}{4}$ kg

$= \frac{(100 \times 4) - 219}{4}$ kg

$= \frac{400 - 219}{4}$ kg

$= \frac{181}{4}$ or $45\frac{1}{4}$ kg

Thus, $45\frac{1}{4}$ wheat left.

9. Time of Hindi movie $= 2\frac{3}{4}$ hrs or $\frac{11}{4}$ hrs

Time of English movie $= 1\frac{7}{8}$ hrs or $\frac{15}{8}$ hrs

Total time taken $= \frac{11}{4} + \frac{15}{8}$

$= \frac{(11 \times 2) + 15}{8}$

$= \frac{22 + 15}{8}$

$= \frac{37}{8} = 4\frac{5}{8}$

10. Total distance cover by a man = 300 km

Distance covered by car = $300 \times \frac{1}{5} = 60$ km

Distance covered by train = $300 \times \frac{3}{5} = 180$ km

Distance covered by scooter = 300 – (60 + 180) km
= (300 – 240) km
= 60 km

11. Total distance covered in one day = $50\frac{12}{9}$ km = $\frac{462}{9}$ km

Distance covered by scooter = $10\frac{2}{9}$ km = $\frac{92}{9}$ km

Distance covered by car = $25\frac{3}{4}$ km = $\frac{103}{4}$ km

Total distance covered by scooter and car = $\left(\frac{92}{9} + \frac{103}{4}\right)$ km

= $\left(\frac{(92 \times 4) + (103 \times 9)}{36}\right)$ km

= $\frac{368 + 927}{36}$ km = $\frac{1295}{36}$ km

Remaining distance covered on foot = $\left(\frac{462}{9} - \frac{1295}{36}\right)$ km

= $\frac{(462 \times 4) - 1295}{36}$ km

= $\frac{1848 - 1295}{36}$ km

= $\frac{553}{36}$ km = $15\frac{13}{36}$ km

12. Quantity of tomato purchased = $3\frac{1}{2}$ kg = $\frac{7}{2}$ kg

Quantity of onion purchased = $\frac{2}{5}$ kg

Quantity of green chilly purchased = $\frac{1}{3}$ kg

Quantity of lemon purchased = $1\frac{1}{2}$ kg or $\frac{3}{2}$ kg

Total vegetables purchased = $\left(\frac{7}{2} + \frac{2}{5} + \frac{1}{3} + \frac{3}{2}\right)$ kg

$$= \left(\frac{(7 \times 15) + (2 \times 6) + (1 \times 10) + (3 \times 15)}{30} \right) \text{ kg}$$

$$= \left(\frac{105 + 12 + 10 + 45}{30} \right) \text{ kg}$$

$$= \frac{172}{30} \text{ kg or } \frac{86}{15} \text{ kg or } 15\frac{11}{15} \text{ kg}$$

Thus, Vandana purchased $15\frac{11}{15}$ kg vegetables.

13. Required fraction $= \frac{11}{30} - \frac{7}{30} = \frac{11-7}{30} = \frac{4}{30}$

Thus required fraction is $\frac{4}{30}$.

14. Part of a book read in 1 hrs by Ashu $= \frac{11}{18}$

Part of a book read in 1 hrs by Rahul $= \frac{5}{18}$

Comparison $= \frac{11}{18} > \frac{5}{18}$

Difference $= \frac{11}{18} - \frac{5}{18}$

$$= \frac{11-5}{18} = \frac{6}{18}$$

Thus Ashu read $\frac{6}{18}$ more than part of the then what Rahul read.

15. Capacity of one tin $= 3\frac{2}{5}$ litre or $\frac{17}{5}$ litre

Capacity of other tin $= 5\frac{3}{4}$ litre or $\frac{23}{4}$ litre

Total capacity of both in $= \left(\frac{17}{5} + \frac{23}{4} \right)$ litre

$$= \frac{(17 \times 4) + (23 \times 5)}{20} \text{ litre}$$

$$= \left(\frac{68 + 115}{20} \right) \text{ litre}$$

$$= \frac{183}{20} \text{ litre or } 9\frac{3}{20} \text{ litre}$$

16. Quantity of wheat produced $= \frac{63}{97}$

Quantity of corn produced $= \frac{25}{97}$

Comparison of both $= \frac{63}{97} > \frac{25}{97}$

Difference $= \frac{63 - 25}{97} = \frac{38}{97}$

The wheat was produced more by $\frac{38}{97}$ part.

Mental Gym

1. b. 2. c. 3. a.

HOTS

Let the total money be $= x$

Money spent on buying books $= \frac{1}{2}$ or $x = \frac{x}{2}$

Money spent on buying note books $= \frac{1}{3}$ or $x = \frac{x}{3}$

Now, he had still money $= 50$

$$x - \left(\frac{x}{2} + \frac{x}{3}\right) = 50$$

$$\frac{6x - (3x + 2x)}{6} = 50 = \frac{6x - 5x}{6} = 50$$

$$\frac{x}{6} = 50 = x = 50 \times 6 = 300$$

He had ₹ 300.

Have a Fun

1. $\frac{60}{384}$ or $\frac{5}{32}$ part is covered by piece A.
2. $\frac{24}{384}$ or $\frac{1}{16}$ part is coloured green. 3. $\frac{49}{384}$ part is coloured yellow.
4. The smaller is piece B.

   It is $= \frac{60}{384} - \frac{36}{384} = \frac{60 - 36}{384} = \frac{24}{384}$ or $\frac{1}{16}$ part smaller
5. $\frac{12}{384} > \frac{9}{384}$

Exercise 10.1

1. a. $\frac{45}{10} = 4.5$

b. $\frac{95}{100} = 0.95$

c. $5\frac{75}{100} = \frac{(5 \times 100) + 75}{100} = \frac{500 + 75}{100} = \frac{575}{100} = 5.75$

d. $6\frac{175}{1000} = \frac{(6 \times 1000) + 175}{1000} = \frac{6000 + 175}{1000} = \frac{6175}{1000} = 6.175$

e. $2\frac{25}{1000} = \frac{(2 \times 1000) + 25}{1000} = \frac{2000 + 25}{100} = \frac{2025}{100} = 20.25$

2. a. $23\frac{2}{10} = \frac{(23 \times 10) + 2}{10} = \frac{230 + 2}{10} = \frac{232}{10} = 23.20$

b. $67\frac{1}{10} = \frac{(67 \times 10) + 1}{10} = \frac{670 + 1}{10} = \frac{671}{10} = 67.10$

c. $194\frac{2}{10} = \frac{(194 \times 10) + 2}{10} = \frac{1940 + 2}{10} = \frac{1942}{10} = 194.20$

d. $849\frac{3}{10} = \frac{(849 \times 10) + 3}{10} = \frac{8490 + 3}{10} = \frac{8493}{10} = 849.30$

e. $871\frac{7}{10} = \frac{(871 \times 10) + 7}{10} = \frac{8710 + 7}{10} = \frac{8717}{10} = 871.7$

f. $895\frac{9}{10} = \frac{(895 \times 10) + 9}{10} = \frac{8950 + 9}{10} = \frac{8959}{10} = 895.9$

g. $723\frac{4}{10} = \frac{(723 \times 10) + 4}{10} = \frac{7230 + 4}{10} = \frac{7234}{10} = 723.4$

h. $856\frac{4}{10} = \frac{(856 \times 10) + 4}{10} = \frac{8560 + 4}{10} = \frac{8564}{10} = 856.4$

i. $623\frac{6}{10} = \frac{(636 \times 10) + 6}{10} = \frac{6360 + 6}{10} = \frac{6366}{10} = 636.6$

j. $784\frac{9}{10} = \frac{(784 \times 10) + 9}{10} = \frac{7840 + 9}{10} = \frac{7849}{10} = 784.9$

3. a. **576.235** Place value of 5 = 5 × thousandths = $5 \times \frac{1}{1000}$

$= \frac{5}{1000} = 0.005$

b. **715.6** Place value of 7 = 7 × hundred = 7 × 100 = 700

c. **473.6** Place value of 7 = 7 × tens = 7 × 10 = 70

d. **72.429** Place value of 2 = 2 × hundredth = $2 \times \frac{1}{100}$

$= \frac{2}{100}$ = 0.02

e. **51.83** Place value of 5 = 5 × tens = 5 × 10 = 50

f. **94.098** Place value of 9 = 9 × tens = 9 × 10 = 90

g. **2.719** Place value of 7 = 7 × tenths = $7 \times \frac{1}{10}$

$= \frac{7}{10}$ = 0.7

h. **3.547** Place value of 7 = 7 × hundredths = $7 \times \frac{1}{100}$

$= \frac{7}{100}$ = 0.07

i. **62.165** Place value of 6 = 6 × hundredths = $6 \times \frac{1}{100}$

$= \frac{6}{100}$ = 0.06

j. **6.812** Place value of 6 = 6 ones = 6 × 1 = 6

k. **9.217** Place value of 1 = 1 hundredths = $1 \times \frac{1}{100}$

$= \frac{1}{100}$ = 0.01

l. **3.879** Place value of 9 = 9 × thousandth = $9 \times \frac{1}{1000}$

$= \frac{9}{1000}$ = 0.009

m. **3.406** Place value of 4 = 4 × tenth = $4 \times \frac{1}{10}$

$= \frac{4}{10}$ = 0.4

n. **3.854** Place value of 8 = 8 × tenth = $8 \times \frac{1}{10}$

= 0.8

o. **65.475** Place value of 4 = 4 × tenth = $4 \times \frac{1}{10}$

= 0.4

p. **4.012** Place value of 2 = 2 × thousand = $2 \times \frac{1}{1000}$

$= \frac{2}{1000}$ = 0.002

q. **9.648** Place value of 6 = 6 × tenth = $6 \times \frac{1}{10}$

$= \frac{6}{10}$ = 0.6

r. **8.806** Place value of 6 = 6 × thousand = $6 \times \frac{1}{1000}$

$= \frac{6}{1000}$ = 0.006

4.

		T	H	T	O	.	t	h	th			T	H	T	O	.	t	h	th
a.	$55\frac{25}{100}$			5	5	.	2	5	0	**b.**	$160\frac{65}{1000}$		1	6	0	.	0	6	5
c.	$4971\frac{5}{10}$	4	9	7	1	.	5	0	0	**d.**	$628\frac{67}{100}$		6	2	8	.	6	7	0
e.	$929\frac{83}{100}$		9	2	9	.	8	3	0	**f.**	$1974\frac{245}{1000}$	1	9	7	4	.	2	4	5
g.	$272\frac{75}{100}$		2	7	2	.	7	5	0	**h.**	$785\frac{945}{1000}$		7	8	5	.	9	4	5
i.	$287\frac{73}{100}$		2	8	7	.	7	3	0	**j.**	$624\frac{73}{1000}$		6	2	4	.	7	3	0

5. a. If the line is divided into 10 equal parts, each part equals $\frac{1}{10}$ of one.

b. The name of the place 10 times less than the ones place is $\frac{1}{10}$.

c. The name of the place 100 times less than the ones place is $\frac{1}{100}$.

d. The **decimals** part separates the whole numbers from the decimals fractions.

Exercise 10.2

1. a. 40 + 4 + 0.2 + 0.07 = **44.27**

b. 400 + 50 + 3 + 0.07 + .008 = **453.708**

c. 700 + 20 + 5 + 0.5 + 0.001 = **725.501**

d. 100 + 90 + 7 + 0.7 + 0.06 + 0.001 = **197.61**

e. 500 + 40 + 0.01 + 0.07 = **540.176**

f. 600 + 80 + 8 + 0.3 + 0.05 + 0.007 = **688.357**

g. 900 + 9 + 0.05 + 0.007 = **909.057**

h. 300 + 9 + 0.07 + 0.008 = **309.078**

i. 200 + 20 + 5 + 0.4 + 0.06 + 0.007 = **225.467**

j. 20 + 5 + 0.06 + 0.07 = **25.067**

2. a. **0.56** = $\frac{5}{10} + \frac{6}{100}$ = 0.5 + 0.06

b. **0.793** = $\frac{7}{10} + \frac{9}{100} + \frac{3}{1000}$ = 0.07 + 0.09 + 0.003

c. **15.006** = $1 \times 10 + 5 + \frac{6}{1000}$ = 10 + 5 + 0.006

d. **3.076** = $3 + \frac{7}{100} + \frac{6}{1000}$ = 3 + 0.07 + 0.006

e. **14.065** = $1 \times 10 + 4 + \frac{6}{100} + \frac{5}{1000}$ = $10 + 4 + 0.06 + 0.005$

f. **45.6** = $4 \times 10 + 5 + \frac{6}{10}$ = $40 + 5 + 0.6$

g. **197.4** = $1 \times 100 + 9 \times 10 + 7 + \frac{4}{10}$ = $100 + 90 + 7 + 0.04$

h. **1.678** = $1 + \frac{6}{10} + \frac{7}{100} + \frac{8}{1000}$ = $1 + 0.6 + 0.07 + 0.08$

i. **27.68** = $2 \times 10 + 7 + \frac{6}{10} + \frac{8}{100}$ = $20 + 7 + 0.6 + 0.008$

j. **1.719** = $1 + \frac{7}{10} + \frac{1}{100} + \frac{9}{1000}$ = $1 + 0.7 + 0.01 + 0.009$

Exercise 10.3

1. a. 2.47, 2.047, 2.46, **2.7**, 2.07 b. **75.1**, 7.25, 7.025, 0.752, 0.0752

c. 6.79, **6.87**, 6.7, 6.09, 6.809

2. a. 4.5, 14.5, 4.15, **4.05**, 4.51 b. 25.5, 6.5, 6.52, **6.02**, 6.51

c. 7.98, 71.98, **0.798**, 70,98

3. a. **1.45, 1.045, 1.4**

Change all the decimals to 3 decimal places, we get 1.400, 1.045, 1.400

Now, 1.045 < 1.400 < 1.450

∴ Ascending order = 1.045 < 1.4 < 1.45

b. **63.19, 8.605, 9.56**

Comparing the whole numbers

we get 8 < 9 < 63

∴ Ascending order = 8.605 < 9.56 < 63.19

c. **34.078, 8.478, 340.78**

Comparing the whole numbers

we get 3 < 34 < 340

∴ Ascending order = 3.478 < 34.078 < 340.78

d. **5.125, 0.512, 1.525**

Comparing the whole numbers

we get 0 < 1 < 5

∴ Ascending order = 0.512 < 1.525 < 5.125

e. **4.044, 40.404, 4.44**

Changing all decimals to 3 decimal places, we get 4.044, 40.404, 4.440

In 4.044 and 4.440 whole number part is same

Thus, we compare the tenths place

0.0 < 0.4

So, we get 4.044 < 4.440

∴ Ascending order = 4.044 < 4.440 < 40.404.

f. **25.08, 28.05, 25.85**

In 25.08 and 25.85, whole number part is same. This we compare the tenths place

0.0 < 0.8

So, we get 25.08 < 25.85

∴ Ascending order = 25.08 < 25.85 < 28.05

g. **126.9, 126.7, 126.5**

Here all whole numbers are equal. Then we compare tenths place

0.5 < 0.7 < 0.9

∴ Ascending order = 126.5 < 126.7 < 126.9

h. **47.3,185.03,146.5**

Comparing the whole numbers

146 < 147 < 185

∴ Ascending order = 146.5 < 147.3 < 185.03

i. **15.05,51.07,15.055**

Changing all decimals to 3 decimal places we get 15.050, 51.070, 15.055
As one of the whole number is greater we compare the other two.
Here we will compare the thousandths part only.

∴ 0 < 5, 150.050 < 15.055

∴ Ascending order = 15.050 < 15.055 < 51.070

4. a. **1.95, 1.095, 1.995**

Changing all decimal into 3 decimal place

1.950, 1.095, 1.995

Comparing the tenth part, we find,
1.095 is the smallest of the three
Now, comparing the hundredth part

We get 5 < 0.9

Thus, the descending order is

1.995 > 1.950 > 1.095

b. **9.01, 12.134, 5.678**

Comparing the whole number we get,

12 > 9 > 5

Descending order = 12.134 > 9.101 > 5.678

c. **60.09, 0.069, 69.09**

Comparing the whole number we get,

69 > 60 > 0

Descending order = 69.09 > 60.09 > 0.069

d. **8.513, 5.813, 8.315**
5.813 is the smallest of the three
Now, comparing the tenths part
We get 0.5 > 0.3
Thus, the descending order is 8.513 > 8.315 > 5.813

e. **0.876, 0.678, 0.687**
Here we compare the tenth part.
∴ 8 > 6 ∴ 0.876 is the largest of the three
Now, we compare the hundredth part
∴ 8 > 7 ∴ 0.687 > 0.678
∴ Descending order = 0.876 > 0.687 > 0.678

f. **1.87, 1.807, 1.897**
Comparing the hundredth part we get,
0.09 > 0.07 > 0.00
Descending order = 1.897 > 1.87 > 1.807

g. **9.45, 9.05, 9.95**
Comparing the tenth part we get,
0.9 < 0.4 < 0.9
Descending order = 9.95 > 9.45 > 9.05

h. **4.567, 4.067, 4.706**
Comparing the tenth part 0.7 > 0.5 > 0.0
Descending order 4.706 > 4.567 > 4.067

i. **19.91, 19.97, 19.99**
Comparing the hundredth part
0.09 > 0.07 > 0.01
Descending order = 19.99 > 19.97 > 19.91

Exercise 10.4

1. a. 0.53 b. 0.71 c. 0.46 d. 0.34
e. 0.093 f. 0.85 g. 0.27 h. 0.67
i. 0.357 j. 0.954

2. a. 0.65 : 6 Tenths 5 Hundredths
b. 0.47 : 4 Tenths 7 Hundredths
c. 0.98 : 9 Tenths 8 Hundredths
d. 0.676 : 6 Tenths 7 Hundredths 6 Thousands
e. 0.054 : 5 Hundredths 4 Thousandths
f. 0.07 : 7 Hundredths
g. 0.961 : 9 Tenths 6 Hundredths 1 Thousandths
h. 0.187 : 1 Tenths 8 Hundredths 7 Thousandths
i. 0.25 : 2 Tenths 5 Hundredths
j. 0.076 : 7 Hundredths 6 Thousandths
k. 0.765 : 7 Tenths 6 Hundredths 5 Thousandths
l. 0.235 : 2 Tenths 3 Hundredths 5 Thousandths

3. a. $0.4 > 0.4$ b. $\frac{1}{10} > \frac{1}{1000}$ c. $0.05 < 0.5$

d. $0.79 < 0.9$ e. $0.098 < 0.1$ f. $0.076 > 0.07$

g. $0.18 < 0.98$

4. a. 0.1 **0.2** 0.3 b. 14.2 **14.3** 14.4 c. 814.8 **814.9** 815

d. 37.06 **37.07** 37.08 e. 43.095 **43.096** 43.097

f. 15.25 **15.26** 15.27 g. 38.09 **38.10** 38.11

5. a. $\frac{2}{5}$ = Converting the denominator into 10 we get

$$\frac{2 \times 2}{5 \times 2} = \frac{4}{10} = 0.4$$

b. $\frac{3}{4}$ = Converting the denominator into 10 we get

$$\frac{3 \times 2.5}{4 \times 2.5} = \frac{7.5}{10} = 0.75$$

c. $\frac{4}{5}$ = Converting the denominator into 10 we get

$$\frac{4 \times 2}{5 \times 2} = \frac{8}{10} = 0.8$$

d. $\frac{3}{20}$ = Converting the denominator into 100 we get

$$\frac{3 \times 5}{20 \times 5} = \frac{15}{100} = 0.15$$

e. $\frac{2}{25}$ = Converting the denominator into 100 we get

$$\frac{2 \times 4}{25 \times 4} = \frac{8}{100} = 0.08$$

f. $\frac{12}{25}$ = Converting the denominator into 100 we get

$$\frac{12 \times 4}{25 \times 4} = \frac{48}{100} = 0.48$$

g. $\frac{7}{8}$ = Converting the denominator into 10 we get

$$\frac{7 \times 1.25}{8 \times 1.25} = \frac{8.75}{10} = 0.875$$

h. $\frac{19}{250}$ = Converting the denominator into 1000 we get

$$\frac{19 \times 4}{250 \times 4} = \frac{76}{1000} = 0.076$$

i. $\frac{56}{50}$ = Converting the denominator into 100 we get

$$\frac{56 \times 2}{50 \times 2} = \frac{112}{100} = 1.12$$

j. $\frac{7}{20}$ = Converting the denominator into 100 we get

$$\frac{7 \times 5}{20 \times 5} = \frac{35}{100} = 0.35$$

k. $\frac{6}{25}$ = Converting the denominator into 100 we get

$$\frac{6 \times 4}{25 \times 4} = \frac{24}{100} = 0.24$$

l. $\frac{5}{8}$ = Converting the denominator into 10 we get

$$\frac{5 \times 1.25}{8 \times 1.25} = \frac{6.25}{10} = 0.625$$

6. a. **3.45** $= \frac{345}{100} = \frac{69}{20} = 3\frac{9}{20}$

b. **8.95** $= \frac{895}{100} = \frac{179}{20} = 8\frac{19}{20}$

c. **8.06** $= \frac{806}{100} = \frac{403}{50} = 8\frac{3}{50}$

d. **2.75** $= \frac{275}{100} = \frac{11}{4} = 2\frac{3}{4}$

e. **6.4** $= \frac{64}{10} = \frac{32}{5} = 6\frac{2}{5}$

f. **1.25** $= \frac{125}{100} = \frac{5}{4} = 1\frac{1}{4}$

g. **7.8** $= \frac{78}{10} = \frac{39}{5} = 7\frac{4}{5}$

h. **4.125** $= \frac{4125}{1000} = \frac{33}{8} = 4\frac{1}{8}$

i. **3.5** $= \frac{35}{10} = \frac{7}{2} = 3\frac{1}{2}$

j. **3.625** $= \frac{3625}{1000} = \frac{29}{8} = 3\frac{1}{2}$

7. b. 9.54 c. 15.759
d. 25.059 e. 104.564

Exercise 10.5

1.
$$\begin{array}{r} {\scriptstyle 1\ 1\ \ \ } \\ 3.614 \\ 3.189 \\ +\ 2.150 \\ \hline 8.953 \end{array}$$

2.
$$\begin{array}{r} {\scriptstyle 1\ \ 1\ \ \ } \\ 6.981 \\ 2.050 \\ +\ 0.100 \\ \hline 9.131 \end{array}$$

3.
$$\begin{array}{r} {\scriptstyle 1\ \ \ \ 1\ \ \ } \\ 78.540 \\ 8.145 \\ +\ 3.190 \\ \hline 89.875 \end{array}$$

4.
$$\begin{array}{r} {\scriptstyle \ 1\ 2\ \ 1\ \ } \\ 152.70 \\ 7.94 \\ +\ 83.38 \\ \hline 244.02 \end{array}$$

5. $\begin{array}{r} {\scriptstyle 1\ 1\ 2\ 1} \\ 217.945 \\ 3.080 \\ +\ 15.297 \\ \hline 236.322 \end{array}$

6. $\begin{array}{r} {\scriptstyle 1\ \ 2} \\ 1.980 \\ 2.463 \\ +\ 6.280 \\ \hline 10.723 \end{array}$

7. $\begin{array}{r} {\scriptstyle 1\ \ \ \ 2} \\ 7.917 \\ 14.815 \\ +\ 9.816 \\ \hline 32.548 \end{array}$

8. $\begin{array}{r} {\scriptstyle 1\ 1\ \ 2} \\ 72.58 \\ 7.94 \\ +\ 8.38 \\ \hline 88.90 \end{array}$

9. $\begin{array}{r} {\scriptstyle 1\ 1\ 1} \\ 215.06 \\ 3.94 \\ +\ 12.49 \\ \hline 231.49 \end{array}$

10. $\begin{array}{r} {\scriptstyle 2\ 1\ \ 1} \\ 9.250 \\ 8.750 \\ +\ 3.054 \\ \hline 21.054 \end{array}$

11. $\begin{array}{r} {\scriptstyle 1\ \ 1} \\ 10.52 \\ 21.38 \\ +\ 15.64 \\ \hline 47.54 \end{array}$

12. $\begin{array}{r} {\scriptstyle 1\ 2\ \ 1} \\ 10.73 \\ 8.80 \\ +\ 23.78 \\ \hline 43.31 \end{array}$

13. $\begin{array}{r} {\scriptstyle 1\ 2\ \ 1} \\ 66.695 \\ 4.961 \\ +\ 6.440 \\ \hline 78.096 \end{array}$

14. $\begin{array}{r} {\scriptstyle 1\ \ 1\ 1} \\ 9.919 \\ 2.681 \\ +\ 7.140 \\ \hline 19.740 \end{array}$

15. $\begin{array}{r} {\scriptstyle 1\ \ 1} \\ 5.650 \\ 9.513 \\ +\ 6.182 \\ \hline 21.345 \end{array}$

16. $\begin{array}{r} {\scriptstyle 1\ 1} \\ 24.256 \\ 9.500 \\ +\ 5.840 \\ \hline 39.596 \end{array}$

Exercise 10.6

1. $\begin{array}{r} {\scriptstyle 8\ 12} \\ 567.\not{9}\not{2} \\ -\ 15.85 \\ \hline 552.07 \end{array}$

2. $\begin{array}{r} {\scriptstyle 9} \\ {\scriptstyle 8\ 10\ 10} \\ 17\not{9}.\not{0}\not{0}7 \\ -\ 45.936 \\ \hline 133.071 \end{array}$

3. $\begin{array}{r} {\scriptstyle 7\ 11} \\ 6\not{8}.\not{1}97 \\ -\ 35.587 \\ \hline 32.610 \end{array}$

4. $\begin{array}{r} {\scriptstyle 5\ 17} \\ 18.\not{6}7 \\ -\ 15.28 \\ \hline 3.39 \end{array}$

5. $\begin{array}{r} {\scriptstyle 6\ 11} \\ 7\not{1}.39 \\ -\ 68.16 \\ \hline 3.23 \end{array}$

6. $\begin{array}{r} {\scriptstyle 2\ 14} \\ 68.\not{3}\not{4} \\ -\ 56.07 \\ \hline 12.27 \end{array}$

7. $\begin{array}{r} {\scriptstyle 13\ 11} \\ {\scriptstyle 6\ 3\ 1\ 10} \\ 17.\not{4}\not{2}\not{0} \\ -\ 11.486 \\ \hline 5.834 \end{array}$

8. $\begin{array}{r} {\scriptstyle 7\ 13} \\ 2\not{8}.\not{3}23 \\ -\ 26.510 \\ \hline 1.813 \end{array}$

9. $\begin{array}{r} {\scriptstyle 11} \\ {\scriptstyle 5\ \not{1}\ 11} \\ \not{6}2.\not{1}99 \\ -\ 34.587 \\ \hline 27.612 \end{array}$

10. $\begin{array}{r} {\scriptstyle 11\ 13\ 9} \\ {\scriptstyle 5\ \not{1}\ 3\ 10\ 15} \\ \not{7}2.\not{4}\not{0}\not{5} \\ -\ 19.998 \\ \hline 52.407 \end{array}$

11. $\begin{array}{r} {\scriptstyle 4\ 12} \\ 5\not{5}.\not{2}48 \\ -\ 23.310 \\ \hline 31.938 \end{array}$

12. $\begin{array}{r} {\scriptstyle 4} \\ {\scriptstyle 6\ 4\ 10\ 4\ 17} \\ \not{7}\not{5}.\not{0}\not{5}7 \\ -\ 26.149 \\ \hline 98.908 \end{array}$

13. $\begin{array}{r} {\scriptstyle 15\ 12\ 13\ 11} \\ {\scriptstyle 2\not{5}\not{2}\ \not{3}\not{1}\ 14} \\ \not{3}\not{6}\not{3}.\not{4}\not{2}\not{4} \\ -\ 284.625 \\ \hline 78.799 \end{array}$

14. $\begin{array}{r} {\scriptstyle 6\ 17} \\ 19.\not{8}76 \\ -\ 16.286 \\ \hline 3.490 \end{array}$

15. $\begin{array}{r} {\scriptstyle 11\ 13} \\ {\scriptstyle 6\not{1}\ \not{3}\ 15} \\ 3\not{7}2.\not{4}\not{5} \\ -\ 148.89 \\ \hline 223.56 \end{array}$

16. $\begin{array}{r} {\scriptstyle 11\ \ 9\ 17} \\ {\scriptstyle 7\not{1}4\ \not{1}\not{0}7\ 14} \\ \not{8}\not{2}\not{5}.\not{0}\not{0}\not{4} \\ -\ 291.498 \\ \hline 533.586 \end{array}$

Exercise 10.7

1. a. **85 rupees 7 paise (₹)**
(₹ 1 = 100 paise)
= 85 rupees + $\frac{7}{100}$ rupees (Paise are converted into rupees)

$= ₹\ 85 + ₹\ 0.07$ $= ₹\ 85.07$

b. **75 rupees 20 paise (₹)**

$= 75 \text{ rupees} + \frac{20}{100} \text{ rupees}$ (Paise are converted into rupees)

$= ₹\ 75 + ₹\ 0.20$ $= ₹\ 75.20$

c. **9 rupees 6 paise (₹)**

$= 9 \text{ rupees} + \frac{6}{100} \text{ rupees}$ (Paise are converted into rupees)

$= ₹\ 9 + ₹\ 0.06$ $= ₹\ 9.06$

d. **18 m 70 cm (m)**
(1 m = 100 cm)

$= 18 \text{ m} + \frac{70}{100} \text{ m}$ (cm are converted into m)

$= 18 \text{ m} + 0.70 \text{ m}$ $= 18.70 \text{ m}$

e. **1 m 7 cm (m)**
(1 7 = 100 cm)

$= 1\text{m} + \frac{7}{100} \text{ m}$ (cm are converted into m)

$= 1 \text{ m} + 0.07 \text{ m}$ $= 1.07 \text{ m}$

f. **10 m 50 cm (m)**

$= 10 \text{ m} + \frac{500}{1000} \text{ m}$ (cm are converted into m)

$= 10 \text{ m} + 0.50 \text{ m}$ $= 10.50 \text{ m}$

g. **7 km 10 m (km)**

$= 7 \text{ km} + \frac{10}{1000} \text{ km}$ (1m = 1000 km are converted into km)

$= 7 \text{ km} + 0.1 \text{ km}$ $= 7.1 \text{ km}$

h. **300 m (km)**

$= \frac{300}{1000} \text{ km}$ (m are converted into km)

$= 0.300 \text{ km}$

i. **100 kg 7 g (kg)**
(1 kg = 1000 g)

$= 100 \text{ kg} + \frac{70}{1000} \text{ kg}$ (g are converted into kg)

$= 100 \text{ kg} + 0.7 \text{ g}$

j. **3 kg 30 g (kg)**

$= 3 \text{ kg} + \frac{30}{1000} \text{ kg}$ (g are converted into kg)

$= 3 \text{ kg} + 0.3 \text{ kg}$ $= 3.3 \text{ kg}$

k. **5 *l* 500 ml (*l*)**

1 *l* = 1000 mL

$= 5\ l + \frac{500}{1000}\ l$ (m*l* are converted into *l*)

$= 5\ l + 0.5\ l$ $= 5.5\ l$

l. **250 ml (*l*)**

$= \frac{250}{1000}\ l$ (m*l* are converted into *l*)

$= 0.250\ l$

m. **65 *l* 605 m*l* (*l*)**

$= 65\ l + \frac{605}{1000}\ l$ (m*l* are converted into *l*)

$= 65\ l + 0.605\ l$ $=$ 65.605 m*l*

n. **10 *l* 5 m*l* (*l*)**

$= 10\ l + \frac{5}{1000}\ l$ (m*l* are converted into *l*)

$= 10\ l + 0.005\ l$ $= 10.005\ l$

2. a. **Add : 88 rupees 16 paisa, 66 rupees 15 paise**

(88 rupees 16 paise $= ₹\ 88 + \frac{16}{100}$

$= ₹\ 88 + ₹\ 0.16$

$= ₹\ 88.16$

	1		1	
	₹	8	8 .	1 6
+ ₹	6	6 .	1	5
	1	5	4 .	3 1

66 rupees 15 paise $= ₹\ 66 + ₹\ \frac{15}{100}$

$= ₹\ 66 + ₹\ 0.15$ $= ₹\ 66.15$)

Now, we ₹ 88.16 and ₹ 66.15

∴ ₹ 88.16 + ₹ 66.15 $= ₹\ 154.31$

b. **Add : 101 rupees 80 paise, 55 rupees 50 paise.**

(101 rupees 80 paise $= ₹\ 101 + ₹\ \frac{80}{100}$

$= ₹\ 101 + ₹\ 80$

$= ₹\ 101.80$

55 rupees 50 paise $= ₹\ 55 + ₹\ \frac{50}{100}$

$= ₹\ 55 + ₹\ 0.50$

$= ₹\ 55.50$)

		1		
+ ₹	1	0	1 .	8 0
+ ₹		5	5 .	6 0
₹	1	5	7 .	3 0

Now, we add ₹ 101.80 and ₹ 55.50

∴ ₹ 101.80 + ₹ 55.50 $= ₹\ 157.30$

c. **Add : 80 m 15 cm, 64 m 32 cm**

(8 m 15 cm = 80 m + $\frac{15}{100}$ m

= 80 m + 0.15 m

= 80.15 m

64 m 3 cm = 64 m + $\frac{32}{100}$ m = 64 m + 0.32 m

= 64.32 m)

	8	0 . 1 5 m
+	6	4 . 3 2 m
1	4	4 . 4 7 m

Now we add 80.15 m and 64.32 m

∴ 80.15 m + 64.32 m = 144.47 m

d. **Add : 15 km 635 m 16 km 344 m**

(15 km 635 m = 15 km + $\frac{635}{1000}$ km

= 15 km + 0.635 km

= 15.635 km

16 km 344 km = 16 km + $\frac{344}{1000}$ km

= 16 km + 0.344 km = (31.979 km)

	1	
	1	5 . 6 3 5 km
+	1	6 . 3 4 4 km
	3	1 . 9 7 9 km

Now, we add 15.635 km and 16.344 km

∴ 15.635 km + 16.344 km = 31.979

e. **Add : 55 kg 100 g, 66 kg 350 g**

(55 kg 100 g = 55 kg + $\frac{100}{1000}$ kg

= 55 kg + 0.1 kg

= 55.1 kg

66 kg 350 g = 66 kg + $\frac{305}{1000}$ kg = 66 kg + 0.350 kg

= 66.350 kg)

	1	
	5	5 . 1 0 0 kg
+	6	6 . 3 5 0 kg
1	2	1 . 4 5 0 kg

Now, we add 55.1 kg and 66.350 kg

∴ 55.1 kg + 66.350 kg = 121.450 kg

f. **Add : 60 *l* 450 m*l*, 361 340 m*l***

60 *l* 450 m*l* = 60 *l* + $\frac{450}{1000}$ *l*

= 60 *l* + 0.450 *l*

= 60.450 *l*

36 *l* 340 m*l* = 36 *l* + $\frac{340}{1000}$ *l*

= 36 L + 0.340 *l* = 36.340 *l*)

	6	0 . 4 5 0
+	3	6 . 3 4 0
	9	6 . 7 9 0

Now, we add, 60.450 *l* and 36.340 *l*

∴ 60.450 *l* + 36.340 *l* = 96.790 *l*

3. a. **Subtract : 33 rupees, 99 paise from 66 rupees 1 paise**

(3 rupees, 99 paise = ₹ 33 + $\frac{99}{100}$

= ₹ 33 + 0.99

= ₹ 33.99

66 rupee, 1 paise = ₹ 66 + ₹ $\frac{1}{100}$

= ₹ 66 + ₹ 0.01 = ₹ 66.01)

Now, we add subtract ₹ 33.99 from ₹ 66.01

or = ₹ 66.01 – ₹ 33.99 = ₹ 32.02

		5	9 10 11
	₹	6	Ø . Ø 1
– ₹	3	3	. 9 9
₹	3	2	. 0 2

b. **Subtract : 5 rupee, 55 paise form 66 rupees 38 paise**

(5 rupees 55 paise = ₹ 5 + ₹ $\frac{55}{100}$

= ₹ 5 + ₹ 0.55

= ₹ 5.055

6 rupees 38 paise = ₹ 66 + ₹ $\frac{38}{100}$

= ₹ 66 + ₹ 0.38 = ₹ 66.38)

Now, we subtract ₹ 5.55 from ₹ 66.38

= ₹ 66.38 – ₹ 5.55 = ₹ 60.83

		5	13
	₹	6	Ø . 3 8
– ₹		5	. 5 5
₹	6	0	. 8 3

c. **Subtract : 101 m 50 cm from 102 m 5 cm**

(101 m 50 cm = 101 m + $\frac{50}{100}$ m

= 101 m + 0.50 m

= 101.50 m

102 m 5 cm = 102 m + $\frac{5}{100}$ m = 102 m + 0.05 m

= 102.05 m)

Now, subtract 101.50 m from 102.05 m

102.05 m – 101.50 m

∴ 102.50 m – 101.50 m = 55 m

		1	10
1	0	2	Ø . Ø 5 m
– 1	0	1	. 5 0 m
	0	.	5 5 m

d. **Subtract : 1 m 11 cm from 10 m 1 cm**

(1 m 11 cm = 1 m + $\frac{11}{100}$ m

= 1 m + 0.11 m = 1.11 m

10 m 1 cm = 10 m + $\frac{1}{100}$ m

= 10 m + 0.01 m = 10.01 m)

Now, we subtract 1.11 m from 10.01 m

10.01 m – 1.11 m

∴ 10.01 m – 1.11 m = 8.90 m

			9
0	1	Ø	10
1	Ø	.	Ø 1 m
– 1	.	1	1 m
8	.	9	0 m

e. **Subtract : 6 km 10 m from 16 km 100 m**

(6 km 10 m = 6 km + $\frac{10}{100}$ km

= 6 km + 0.01 km = 6.01 km

16 km 100 m = 16 km + $\frac{100}{1000}$ km

= 16 km + 0.1 km

= 16.10 km)

	0 10
	16.1Ø km
−	6.01 km
	10.09 km

Now, we subtract 6.01 km from 16.1 km

∴ 16.1 km − 6.01 km = 10.9 km

f. **Subtract : 86 km 999 km from 89 km 111 m**

(86 km 999 m = 86 km + $\frac{999}{1000}$ km

= 86 km + 0.999 km = 86.999 km

98 km 111 m = 89 km + $\frac{111}{1000}$ km

= 89 km + 0.111 km

= 89.111 km

	10 10
	8 0 Ø 11
	8Ø.1 1 1
−	8 6 . 9 9 9
	2 . 1 1 2

Subtract 86.999 km from 89.111 km

89.111 km − 86.999 km

∴ 89.111 km − 86.999 km = 2.112 km

g. **Subtract : 6 kg 49 g from 6 kg 490 g**

(6 kg 49 g = 6 kg + $\frac{49}{1000}$ g

= 6 kg + 0.049 kg = 6.049 kg

6 kg 490 g = 6 kg + $\frac{490}{1000}$ kg

= 6 kg + 490 kg

= 6.490 kg)

	8 10
	6 . 4 Ø Ø kg
−	6 . 0 4 0 kg
	0 . 4 4 1 kg

Subtract 6.049 kg from 6.490 kg

∴ 6.490 kg − 6.049 kg = 441 kg

h. **Subtract : 15 kg 656 g from 15 kg 744 g**

(15 kg 656 g = 15 kg + $\frac{656}{1000}$ kg

= 15 kg + 0.656 kg

= 15.656 kg

15 kg 744 g = 15 kg + $\frac{744}{1000}$ kg

= 15 kg 0.744 g

= 15.744 kg)

	13
	6 3 14
	1 5 . 7 4 4 kg
−	1 5 . 6 5 6 kg
	0 . 0 8 8 kg

Now, we subtract 15.656 kg from 15.744 kg

i. **Subtract : 5 *l* 509 m*l* from 5 *l* 590 m*l***

5 l 509 ml = $5\ l + \frac{509}{1000}\ l$

= $5\ l + 0.509\ l$

= $5.509\ l$

5 L 590 ml = $5\ l + \frac{590}{1000}\ l$

= $5\ l + 0.590\ l$ = $5.590\ l$

Now, we, subtract 5.509 *l* from 5.590 *l*

5.590 *l* – 5.509 *l*

∴ 5.590 *l* – 5.509 *l* = 0.081 *l*

		8	10	
5	.	5	Ø	Ø *l*
– 5	.	5	0	9 *l*
0	.	0	8	1 *l*

j. **Subtract : 1 *l* 11 m*l* from 2 *l* 10 m*l***

1 l m*l* = $1\ l + \frac{11}{1000}\ l$

= $2\ l + 0.01\ l$

= $2.01\ l$

Subtract : 1.011 *l* from 2.01 *l*

2.01 *l* – 1.011 *l*

∴ 2.01 *l* – 1.011 *l* = 0.999 *l*

			10	
1	9	0	10	
2	.	Ø	Ø	*l*
– 1	.	0	1	1 *l*
0	.	9	9	9 *l*

Mental Gym

1. d. 2. d. 3. b.

HOTS

22.97 21.417 **18.47** 12.47 **0.47**

22.97 – 1.5 21.47 – 3 18.47 – 6 12.47 – 12

11 Metric System

Exercise 11.1

1. 1 decimetre = **10** centimeters.
2. 1 kilogram = **100** decagrams.
3. 1 decilitre = **100** millilitres.
4. 1 metre = 1000 **millimetres**
5. 1 hectometre = 100 **metres**
6. 1 kilogram = **10** hectograms
7. 1 kilometre = 1000 **metres**
8. 1 litres = **100** centilitres.
9. 1 hectometre = **1000** decimetres.
10. 1 **decalitre** = 1000 centilitres.
11. 1 decametre = 100 **decimetres**
12. 1 centilitre = **10** millilitres.
13. 1 hectolitre = **10** decalitres.
14. 1 **decalitre** = 100 decilitres.
15. 1 decimetre = **100** millimetres.
16. 1 **hectolitres** = 10 decalitres.

Exercise 11.2

1. a. **Convert into metres :**
7 km 6 mm 5 dam 3 m

= $7 \times 1000 + 6 \times 100 = 5 \times 10 + 3$

= 7000 + 600 + 50 + 3 = 7653 m

b. **Convert into decimetres :**
6 m 7 dm 5 dm 5 cm 4 mm
= 6 × 1000 + 7 × 100 + 5 × 10 + 4
= 6000 + 700 + 50 + 4 = 6754 mm

c. **Convert into centimetres :**
4 hm 7 dam 6 m 3 dm 2 cm
= 4 × 10000 + 7 × 1000 + 6 × 100 + 3 × 10 + 2
= 40000 + 7000 + 600 + 30 + 2 = 47632 cm

d. **Convert into decimetres :**
5 km 3 hm 7 dam 3 m 2 dm
= 5 × 10000 + 3 × 1000 + 7 × 100 + 3 × 10 + 2
= 50000 + 3000 + 700 + 30 + 2 = 53732

e. **Convert into decimetres :**
9 km 7 hm 6 dam
= 9 × 100 + 7 × 10 + 6 = 900 + 70 + 6
= 976 dam

f. **Convert into grams :**
5 kg 9 hg 7 dag 6 gm
= 5 × 1000 + 9 × 100 + 7 × 10 + 6
= 5000 + 900 + 70 + 6 = 5976 gm

g. **Convert into Miligrams :**
9 gm 7 dg 7 cg 3 mg
= 9 × 1000 + 7 × 100 + 7 × 10 + 3
= 9000 + 700 + 70 + 3 = 9773 mg

h. **Convert into centigrams :**
4 dag 3 gm 5 dg 6 cg
= 4 × 1000 + 3 × 100 + 5 × 10 + 6
= 4000 + 300 + 50 + 6 = 4356 cg

i. **Convert into decigrams :**
5 kg 8 hg 6 dag 5 gm 3 dag
= 5 × 10000 + 8 × 1000 + 6 × 100 + 5 × 10 + 3
= 50000 + 8000 + 600 + 50 + 3 = 58653 dag

j. **Convert into decagrams :**
3 kg 6 hg 5 dag
= 3 × 100 + 6 × 10 + 5
= 300 × 60 + 5 = 365 dag

k. **Convert into litres :**
6 k*l* 7 h*l* 6 dal 4 *l*
= 6 × 1000 + 7 × 100 + 6 × 10 + 4
= 6000 + 700 + 60 + 4 = 6764 *l*

l. **Convert into centilitres :**
5 da*l* 3*l* 7 da*l* 7 c*l*
= 5 × 1000 + 3 × 100 + 7 × 10 × 7
= 5000 + 300 + 70 + 7 = 5377 c*l*

m. **Convert into decilitres :**
3 da*l* 5 *l* 7 d*l*
= 3 × 100 + 5 × 10 + 7
= 300 + 50 + 7 = 357 d*l*

n. **Convert into decilitres :**
9 k*l* 4 h*l* 7 da*l*
= 9 × 100 + 4 × 10 + 7
= 900 + 40 + 7 = 947 d*l*

o. **Convert into mililitres :**
9 l 8 dl 7 cl 5 ml
= 9 × 1000 + 8 × 100 + 7 × 10 + 5
= 9000 + 800 + 70 + 5 = 98705 m*l*

p. **Convert into *l* and m*l* :**
= 5000 m*l* + 85 m*l* = (5000 ÷ 1000) *l* + 85 m*l*
= 5 *l* + 85 m*l* = 5 *l* 85 m*l*

2. a. **65395 mm**

10	65395 mm
10	6539 cm 5 mm
10	653 dm 9 cm
10	65 m 3 dm
10	6 dam 5 m

65395 mm = 6 dam 5 m 3 dm 9 cm 5 mm

b. **34628 mg**

10	34628 mg
10	3462 cg 8 mg
10	346 dg 2 cg
10	34 m 6 dg
10	3 dag 4 g

34628 mg = 3 dg 4 g 6 dg 2 cg 8 mg

c. **23846 m*l***

10	23846 m*l*
10	2384 c*l* 6 m*l*
10	238 dl 4 c*l*
10	23 *l* 8 d *l*
10	2 da*l* 3 *l*

23846 m*l* = 2 dal 3 *l* 8 d*l* 4 c*l* 6 m*l*

d. **54891 cm**

10	54891 cm
10	5489 dm 1 cm
10	548 m 9 dm
10	54 dam 8 m
10	5 hm 4 dam

54891 cm = 5 hm 4 dam 8 m 9 dm *l* cm

e. **413985 cg**

10	413985 cg
10	41398 dg 5 cg
10	4139 g 8 dg
10	413 dag 9 g
10	41 hg 3 dag
10	4 kg 1 hg

413985 cg = 4 kg 1 hg 3 dag 9 g 8 dg 5 cg

f. **73945 cl**

10	71945 c*l*
10	7394 dl 5 c*l*
10	739 *l* 4 d *l*
10	73 dal 9 *l*
10	7 h*l* 3 dal

73945 cl = 7 h*l* 3 dal 9*l* 4 d*l* 5 c*l*

g. **87465 dm**

10	87465 dm
10	8746 m 5 dm
10	874 dam 6 m
10	87 mm 4 dam
10	8 km 7 hm

87465 dm = 8 km 7 hm 4 dam 6 m 5dm

h. **83047 dg**

10	83047 dg
10	8304 g 7 dg
10	830 dg 4 g
10	8 kg 3 hg

83047 dg = 8 kg 3 hg 4 g 7 dg

i. **62834 dg**

10	62834 dg
10	6283 g 4 dg
10	628 dag 3 g
10	62 hg 8 dag
10	6 kg 2 hg

62834 dg = 6 kg 2 hg 8 dag 3 g 4 dg

j. **94587 m**

10	74587 m
10	9458 dam 7 m
10	945 mm 8 dam
	94 km 5 mm

94587 m = 74 km 5 hm 8 dam 7 m

k. **91243 g**

10	91243 g
10	9124 dag 3 g
10	912 hg 4 dag
	91 kg 2 hg

91243 g = 91 kg 2 hg 4 dag 3 g

l. **82435 kg**

10	82435 g
10	8243 dag 5 g
10	824 hg 3 dag
	82 kg 4 hg

82435 kg = 82 kg 4 hg 3 dag 5 g

Exercise 11.3

1.

m	dm	cm	mm
(1)	(1)	(1)	
5	4	7	2
3	9	5	8
+ 2	6	3	
9	6	9	3

= 9 m 6 dm 9 cm 3 mm

2.

km	hm	dam	m
	(1)	(2)	
9	6	5	4
2	0	7	8
+ 4	1	3	9
1	5	8	7	1

= 15 km 8 hm 7 dam 1m

3.

hm	dam	m	dm
		(1)	
9	0	1	5
	2	0	6
+	5	7	6
9	9	9	7

= 9 hm 9 dam 9 m 7 dm

4.

m	dm	cm	mm
(1)	(1)	(1)	
6	1	3	5
2	7	6	4
+ 3	2	5	
9	2	2	4

= 9 m 2 dm 2 cm 4 mm

5.

km	hm	dam	m
	(1)	(1)	
7	2	8	7
9	2	0	5
+ 3	1	7	5
1	9	6	6	7

6.

hm	dam	m	dm
(1)	(1)		
2	4	8	3
		5	4
+ 7	9	2	
3	3	2	9

7.

kg	hg	dag	g
(1)	(2)	(1)	
9	6	5	2
4	5	6	7
+	3	9	6
1	4	6	1	5

8.

g	dg	cg	mg
(1)		(1)	
	1	2	5
5	7	2	3
+ 4	3	2	6
1	0	1	7	4

= 19 k m 6 hm
6 dam 7 m

= 3 hm 3 dam
2 m 9 dm

= 14 kg 6 hg
1 dag 5 g

= 10 g 1 dg 7
cg 4 mg

9.

dag	g	dg	cg
	(2)	(1)	
6	0	5	7
		5	4
+	7	9	2
6	9	0	3

= 6 dag 9g
30 g

10.

kl	hl	dal	l
		(1)	
0	9	2	4	7
	5	0	1	9
+	6	7	2	3
2	0	9	8	9

= 20 k*l* 9 h*l*
8 dal 9*l*

11.

l	dl	cl	ml
(1)	(1)	(1)	
5	4	2	3
		6	7
	9	3	7
6	4	2	7

= 5 *l* 4 dl 2
c*l* 7 m*l*

12.

dal	l	dl	cl
(1)	(1)	(1)	
		8	5
	9	6	8
+	4	7	3	4
	5	7	8	7

= 5 dal 7 *l* 8
d*l* 7 c*l*

Exercise 11.4

1.

kg	hg	dag	g
	(12)	(16)	
(8)	~~2~~	~~6~~	16
~~9~~	~~3~~	~~7~~	~~6~~
– 2	6	8	9
6	6	8	7

= 6 kg 6 hg
8 dag 7 g

2.

g	dg	cg	mg
		(12)	
	(4)	~~2~~	18
8	~~5~~	~~3~~	~~8~~
– 3	4	6	9
5	0	6	9

= 5 g 6 cg
9 mg

3.

dag	g	dg	g
	(13)	(12)	
(4)	~~3~~	~~2~~	12
~~5~~	~~4~~	~~3~~	~~2~~
– 3	6	5	7
1	7	7	5

= 1 dag 7g 7
dg 5 cg

4.

dal	l	dl	cl
	(15)	(13)	
(7)	~~5~~	~~3~~	13
~~8~~	~~6~~	~~4~~	~~3~~
– 2	8	9	7
5	7	4	6

= 5 dal 7 l 4
dl 6 cl

5.

km	hm	dam	m
		(6)	12
~~9~~	~~8~~	~~7~~	~~2~~
– 3	5	6	9
6	3	0	3

= 6 km 3 hm
0 dam 3 m

6.

hm	dam	m	dm
		(11)	
	(8)	~~1~~	11
7	~~9~~	~~2~~	~~1~~
– 2	7	5	6
5	1	6	5

= 5 hm 1 dam
6 m 5 m

7.

kl	hl	dal	l
		(12)	
	(7)	~~2~~	12
5	~~8~~	~~3~~	~~2~~
– 2	4	9	7
3	3	3	5

= 3 kL 3 hL
3 dal 5 L

8.

l	dl	cl	ml
	(11)		
(8)	~~1~~	17	
~~9~~	~~2~~	~~7~~	4
– 3	8	9	3
5	3	8	1

= 5 L 3 dL 8
cl 1 mL

Exercise 11.5

1. a.

kg	hg	dag	g
5	2	7	6
		×	4
2	1	1	0	4

= 21 kg 1 hg
0 dag 4 g

b.

km	hm	dam	m
7	2	4	3
		×	7
5	0	7	0	1

= 50 km 7 hm
0 dam 1 m

c.

km	hm	dam	m
4	3	7	2
		×	5
2	1	8	6	0

= 21 km 8 hm
6 dam 0 m

d.

kl	hl	dal	l
3	1	2	4
		×	3
9	3	7	2

= 9 k*l* 3 h*l*
7 dal 2l

e.

kl	dl	cl	ml
7	0	4	5
		×	6
4	2	2	7	0

f.

m	dm	cm	mm
9	3	7	5
		×	4
3	7	5	0	0

g.

kl	hl	dal	l
2	1	7	6
		×	5
1	0	8	8	0

h.

g	dg	cg	mg
9	0	6	8
		×	7
6	3	4	7	6

= 42 kL 2 dL 7 cl 0 mL = 37 m 5 dm 0 cm 0 mm = 10 kL 8 hL 8 dal 0 l = 63 g 4 dg 7 cg 6 mg

2. a.

g	dg	cg	mg
1	2	7	1
5) 6	3	5	5
– 5			
1	3		
– 1	0		
	3	5	
–	3	5	
		0	5
	–	0	5
			0

= 1 g 2 dg 7 cg 1 mg

b.

m	dm	cm	mm
2	3	4	7
2) 8	6	9	4
– 8			
0	6		
– 0	6		
	0	9	
–	0	8	
		1	4
	–	1	4
			0

= 2 m 3 dm 4 cm 7 mm

c.

m	dm	cm	mm
1	0	0	8
9) 9	0	7	2
– 9			
0	0	7	2
– 0	0	7	2
			0

= 1 m 0 dm 0 cm8 mm

d.

l	dl	cl	mL
6	2	2	
7) 4	3	5	4
– 4	2		
	1	5	
–	1	4	
		1	4
	–	1	4
			0

= 6 *l* 2 d*l* 2 c*l*

e.

g	dg	cg	mg
2	0	1	8
3) 6	0	5	4
– 6			
	0	5	
–	0	3	
		2	4
	–	2	4
			0

= 2 g 0 dg 1 cg 8 mg

f.

kl	hl	dal	l
2	0	1	8
6) 3	7	9	8
– 3	6		
	1	9	
–	6	8	
		1	8
	–	1	8
			0

= 2 k*l* 0 h*l* 1 dal 8*l*

g.

km	hm	dam	m
1	8	2	8
4) 7	3	1	2
– 4			
3	3		
– 3	0		
	1	1	
–	0	8	
		3	2
	– 3	2	
			0

= 1 km 8 hm 2 dam 8 m

h.

g	dg	cg	mg
6	4	5	
3) 1	9	3	5
– 1	8		
	1	3	
–	1	2	
		1	5
	–	1	5
			0

= 6 g 4 dg 5 cg

Exercise 11.6

1. a. **2.436 km**
(1 km = 1000 m)
= 2.436 × 1000 m
= 2436 m

b. **2.47 hm**
(1 hm = 100 m)
= 2.47 × 100 m
= 247 m

c. **3.86 dam**
(1 dam = 10 m)
= 3.86 × 10 m
= 38.6 m

d. **735 dm (10 dm = 1 m)**
(10 dm = 1 m)
= $735 \times \frac{1}{10}$ m
= 73.5 m

e. **6174 mm**
(1000 mm = 1 m)
= $6174 \times \frac{1}{1000}$ m
= 6.174 m

f. **215 cm**
(100 cm = 1 m)
= $215 \times \frac{1}{100}$ m
= 2.15 m

2. a. **18.363 kg**
(1 kg = 1000 g)
= 18.363 × 1000 g
= 18363 g

b. **43.6 hg**
(1 hg = 100 g)
= 43.6 × 100 g
= 4360 g

c. **3.25 dag**
(1 dag = 10 g)
= 3.25 × 10 g
= 32.5 g

d. **786 dg**
(10 dag = 1 g)
= $786 \times \frac{1}{10}$ g
= 78.6 g

e. **7124 mg**
(1000 mg = 1 g)
= $7124 \times \frac{1}{1000}$ g
= 7.124 g

f. **617 cg**
(100 cg = 1 g)
= $617 \times \frac{1}{100}$ g
= 6.17 g

3. a. **4.07 kL**
(1 kL = 1000 *l*)
= 4.07 × 1000 *l*
= 4070 *l*

b. **15.76 hL**
(1 hL = 100 *l*)
= 15.76 × 100 *l*
= 1576 *l*

c. **0.980 dal**
(1 dal = 100 l)
= 0.980 × 10
= 9.8 *l*

d. **317 dl**
(10 dl = 1 *l*)
= $317 \times \frac{1}{10}$
= 3.17 *l*

e. **9125 mL**
(1000 mL = 1 *l*)
= $9125 \times \frac{1}{1000}$
= 9.125 *l*

f. **315 cl**
(100 cl = *l*)
= $315 \times \frac{1}{100}$
= 3.15 *l*

Exercise 11.7

1. a.

	1 1	
	8.719	g
+	2.567	g
	11.286	g

b.

	1 1	
	6.915	m
+	4.768	m
	11.683	m

c.

	1	
	6.218	kg
+	4.517	kg
	10.735	kg

d.

	1	
	3.176	cl
+	6.743	cl
	9.919	cl

e.

	1	
	3.292	kl
+	9.376	kl
	12.668	kl

f.

	1 1	
	6.743	km
+	8.437	km
	15.180	km

g.

	1	
	6.381	hg
+	1.176	hg
	9.557	hg

h.

	1 1	
	7.986	km
+	4.647	km
	12.633	km

2. a.

	5 11 6 12	
	~~6~~.~~1~~~~7~~~~2~~	dal
−	3.215	dal
	2.957	dal

b.

	12 13	
	8 ~~2~~ 3 ~~16~~	
	~~9~~.~~3~~~~4~~~~6~~	kg
−	4.679	kg
	4.667	kg

c.

	15	
	6 ~~5~~ 18	
	9.~~7~~~~6~~~~8~~	km
−	4.399	km
	5.369	km

d.

	16 12	
	8 ~~6~~ ~~2~~ 18	
	~~9~~.~~7~~~~3~~~~8~~	m
−	3.879	m
	5.859	m

e.

	17 16	
	8 ~~7~~ ~~6~~ 16	
	~~9~~.~~8~~~~7~~~~6~~	cL
−	6.987	cL
	2.889	cL

f.

	3 17	
	7.~~4~~~~7~~~~8~~	kl
−	2.388	kl
	5.090	kl

g.

	14 13	
	7 ~~4~~ ~~3~~ 16	
	~~8~~.~~5~~~~4~~~~6~~	g
−	3.779	g
	4.767	g

h.

	13	
	2 ~~3~~ 15	
	~~3~~.~~4~~~~5~~~~8~~	cl
−	1.276	cl
	2.182	cl

Exercise 11.8

1.

Weight of one ornament	=	14 g 200 mg
Weight of second ornament	=	17 g 700 mg
Weight of third ornament	=	8 g 500 mg
Weight of fourth ornament	=	4 g 400 mg
Total weight of four ornament	=	14 g 200 mg + 17 g 700 mg + 8 g 5 mg + 4 g 400 mg

g		mg		
	1			
1	4	2	0	0
1	7	7	0	0
	8	5	0	0
+	4	4	0	0
4	4	8	0	0

= 44 g 800 mg

Thus total weight of four ornament is 44 g 800 mg.

2. Length of cloth sold to first customer = 50 m 25 cm
Length of cloth sold second customer = 75 m 70 cm
Length of cloth sold third customer = 65 m 25 cm
Length of total cloth sold = 50 m 25 cm + 75 m 70 cm + 65 m 25 cm = 191 m 20 cm

	m		cm	
	(1)	(1)	(1)	
	~~5~~	~~0~~	~~2~~	5
	7	5	7	0
+	6	5	2	5
1	9	1	2	0

3. Capacity of the tank = 75 *l*
Quantity of petrol fill = 37 *l* 2 50 m*l*
Quantity of petrol can be hold = 75 *l* – 37 *l* 250 m*l*
= 47 *l* 750 ml

47 *l* 750 m*l* petrol can be hold.

	l		mL	
		(9)		
	(4)	(10)	(10)	
	7	~~5~~	~~0~~	0
–	3	7	2	5	0
	4	7	7	5	0

4. Total wire purchase = 600 m
Wire sold to customer = 55 m 65 m
Wire sold to other customer 147 m 76 cm
Total wire sold = 55 m + 65 cm + 147 m 76 cm
= 203 m 41 cm

	m			cm	
	(1)	(1)	(4)	(1)	
		5	~~5~~	~~6~~	5
+	1	4	7	7	6
	2	0	3	4	1

	m			cm	
		(9)	(9)	(9)	
	(5)	~~(10)~~	~~(10)~~	~~(10)~~	(10)
	~~6~~	~~0~~	~~0~~	~~0~~	~~0~~
–	2	0	3	4	1
	3	9	6	5	9

The length of wire left = 600 m – 203 m 41 cm
= 396 m 59 cm

Thus, the length of wire left is 396 m 59 cm.

5. Quantity of petrol filled in 1 day = 30 *l* 500 m*l*
Quantity of petrol filled in 7 days = 30 *l* 500 m*l* × 7
= 213 *l* 500 m*l*

Than, Manan filled 213 *l* 500 m*l* in the first week.

	l			mL	
	3	0	5	0	0
				×	7
2	1	3	5	0	0

6. Distance from city A to B = 586 km 850 m
Distance from city C to A = 299 km 750 m
Distance from city C to B = 586 km 850 m – 299 km 750 m
= 287 km 100 m

Thus, distance from city C to B is 287 km 100 m.

	m			cm	
		(17)			
	(4)	~~(7)~~	(16)		
	~~5~~	~~8~~	~~6~~	8	5	0
–	2	9	9	7	5	0
	2	8	7	1	0	0

7. Number of pieces = 4
Length of each piece = 75 cm
Length of all four pieces = 75 cm × 4

= 300 cm = 3 m

Total length of the piece = 47.80 m

∴ Length remained = 47.80 – 3 m = 44.80 m

	7	5	cm
×	4		cm
3	0	0	cm

4	7	.	8	0	m
–	3	.	0	0	m
4	4	.	8	0	m

Thus, 44.80 m rod are remained.

8. Quantity of rice eaten in a day = 350 g

Quantity of rice in a week = 350 g × 7

= 2450 g or 2 kg 450 g

He eat 2 kg 450 g rice in a week.

	3	5	0	g
		× 7		g
2	4	5	0	g

9. Number of botles produces = 200

Weight of each bottle = 750 g

Total weight of 200 bottles = 750 g × 200

= 150000 g or 150 kg

Thus, 150 kg weight of 200 bottles.

	7	5 0
×	2	0 0
	0	0 0
0	0	0 0
1	5	0 0 0
1	5	0 0 0

10. Total quantity of milk = 2.745 l

= 2.745 × 1000

= 2745 ml

Number of friends = 5

Quantity of milk received by each friend = 2745 ml ÷ 5

= 549 mL

Thus, each friend got 549 ml milk.

```
5) 2745 (549
  – 25
  ----
    24
  – 20
  ----
    45
  – 45
  ----
     0
  ----
```

Mental Gym

1. c. 2. d. 3. a.
4. a. 5. b.

HOTS

1. First we pour 5 *l* of water in 3 *l* container now you will have 2 *l* remaining in 5 *l* .... Now empty the 3 *l* and fill it will 2 *l* from the 5 *l* container .... Now take 5 *l* and pour 2 dl. One more litre to 3 *l* container... Now you are left 4 *l* in 5 *l* conatiner.
2. Weight of watermelon = 3 kg 525 g

   Weight of a papaya = 2 kg 250 g

   Comparison = 3 kg 525 g > 2 kg 25 g

   Watermelon is heavier fruit

kg		g	
	4	(12)	
3	~~5~~	~~2~~	5
– 2	2	5	0
1	2	7	5

difference = 3 kg 525 g – 2 kg 250 g = 1 kg 275 g

Watermelon is 1 kg 275 g heavier papaya.

Have a Fun

1. No one. Both are equal.
2. 2 litre jug from 5 litre jug $2 + 2 = 4$ and $5 - 4 = 1$
   $\therefore$ 1 litre will remain in the 5 litre jug.
3. She cut the 7 cm rod in the pieces of 1 cm, 2 cm and 4 cm respectively.
   $1 + 2 + 4 = 7$

12 Time

Exercise 12.1

1. a. Suman comes back from school at 2:10 **p.m.**
b. Hari cleans his teeth at 6:40 **a.m.**
c. Geeta goes to bed at 10:00 **p.m.**
d. Manan takes his lunch at 1:10 **p.m.**
e. Vandana takes breakfast at 9:00 **a.m.**

2. a. 6:35 a.m. b. 10:15 p.m. c. 4:30 p.m.
d. 4:50 a.m. e. 11:05 p.m. f. 12:30 p.m.

Exercise 12.2

1. a. 1 : 30 p.m. = **1.30 + 12** = **13.30 hrs**
b. 7 : 00 p.m. = **7.00 + 12** = **19.00 hrs**
c. 8 : 15 p.m. = **8.15 + 12** = **20.15 hrs**
d. 7 : 45 a.m. = **7.45 hrs**
e. 9 : 25 p.m. = **9.25 + 12** = **21.25 hrs**
f. 11 : 40 p.m. = **11.40 + 12** = **23 : 40 hrs**

2. a. 22 : 25 hours = **22.25 – 12** = **10 : 25 p.m.**
b. 16 : 45 hours = **16.45 – 12** = **4 : 45 p.m.**
c. 17 : 30 hours = **17.30 – 12** = **5 : 30 p.m.**
d. 10 : 45 hours = **10 : 45 a.m.**
e. 21 : 20 hours = **21.20 – 12** = **9 : 20 p.m.**
f. 13 : 25 hours = **13.45 – 12** = **1.45 p.m.**
g. 18 : 45 hours = **18.45 – 12** = **6.45 p.m.**

3. a. The bus left a city at 7 : 30 a.m. It reached its destination at 1600 hrs, it travelled for **8 : 30 (7 : 30 a.m. = 730 hrs, 1600 hrs – 730 hrs)** hrs.
b. An aircraft left an airport at 7 : 30 p.m., if it travelled for 3 hrs, 20 min. It reached its destination at **22 : 50 (7 : 30 p.m. = 1930 hrs + 3 hrs 20 min)** hrs.
c. A car travelled for 5 hrs. 20 min. It arrived its destination at 2 : 30 p.m it must have started at **9 : 10 (5 hrs 20 min before 2 : 30 p.m. = 14 : 30 hrs 5 hrs 60 min)** a.m.
d. A train arrived at a station at 19 : 20 hrs. If the journey took 10 hrs, 20 min, it left at **9 : 00 (19 hrs 20 min 10 hrs 20 min = 9 hrs = 9 : 00 a.m.)** a.m.

Exercise 12.3

1. a. **1 hrs 30 min** = $1 \times 60 + 30$ min = $60 + 30$ min = 90 min
b. **3 hrs 40 min** = $3 \times 60 + 30$ min = $180 + 30$ min = 210 min
c. **5 hrs 35 min** = $5 \times 60 + 35$ min = $300 + 35$ min = 335 min

d. **4 hrs** = 4 × 60 min = 240 min

2. a. **75 min** = 75 ÷ 60 min
= 1 hrs 15 min

```
    1   → hrs
60 ) 7 5
   - 6 0
   -----
     1 5 → min
   -----
```

b. **90 min** = 90 ÷ 60 min
= 1 hr 30 min

```
    1   → hrs
60 ) 6 0
   - 6 0
   -----
     3 0 → min
   -----
```

c. **65 min** = 65 ÷ 60 min
= 1 hr 5 min

```
    1   → hrs
60 ) 6 5
   - 6 0
   -----
       5 → min
   -----
```

d. **125 min** = 125 ÷ 60 min
= 2 hrs 5 min

```
    2   → hrs
60 ) 1 2 5
   - 1 2 0
   -------
       5 → min
   -------
```

3. a. **7 min** = 7 × 60 sec = 420 sec
b. **10 min** = 10 × 60 sec = 600 sec
c. **35 min** = 35 × 60 sec = 2100 sec
d. **37 min** = 37 × 60 sec = 2220 sec

4. a. **250 sec** = 250 ÷ 60 sec
= 4 min 10 sec

```
    4   → min
60 ) 2 5 0
   - 2 4 0
   -------
     1 0 → sec
   -------
```

b. **315 sec** = 315 ÷ 60 sec
= 5 min 15 sec

```
    4   → min
60 ) 3 1 5
   - 3 0 0
   -------
       15 → sec
   -------
```

c. **550 sec** = 550 ÷ 60 sec
= 9 min 10 sec

```
    9   → min
60 ) 5 5 0
   - 5 4 0
   -------
     1 0 → sec
   -------
```

d. **175 sec** = 175 ÷ 60 sec
= 2 min 45 sec

```
    2   → min
60 ) 1 7 5
   - 1 2 0
   -------
     4 5 → sec
   -------
```

5. (1 hrs = 3600 sec)
a. **3 hrs** = 3 × 3600 sec = 10800 sec
b. **5 hrs** = 5 × 3600 sec = 18000 sec
c. **9 hrs** = 9 × 3600 sec = 32400 sec
d. **2 hrs** = 2 × 3600 sec = 7200 sec

6. a. **2 hrs 15 min** = (2 × 3600 + 15 × 60) sec
= 7200 + 900 sec = 8100 sec
b. **5 hrs 45 min** = (5 × 3600 + 45 × 60) sec
= (18000 + 2700) sec = 20700 sec
c. **7 hrs 25 min** = (7 × 3600 + 25 × 60) sec

= (25200 + 1500) sec = 26700 sec

d. **3 hrs 55 min** = (3 × 3600 + 55 × 60) sec
= (10800 + 3300) sec = 14100 sec

7. a. **3840** = sec convert into min and sec = (3840 ÷ 60)
= 64 min
Now 64 minutes = (64 ÷ 60) hrs = 1 hrs and 4 min

```
      64 → min
60 ) 3840
   - 36
   ----
     240
   - 240
   -----
       0 → sec
```

```
      1 → hrs
60 ) 64
   - 60
   ----
     4 → min
```

b. **4500 sec** = sec convert into min and sec
= (4500 ÷ 60) min = 75 min = 1 hrs and 15 min

```
      75 → min
60 ) 4500
   - 42
   ----
     300
   - 300
   -----
       0 → sec
```

```
      1 → hrs
60 ) 75
   - 60
   ----
    15 → min
```

c. **15500 sec** = sec convert into min and sec
= (15500 ÷ 60) min = 258 min 20 sec
Now, 258 minutes = (258 ÷ 60) hrs = 4 hrs 18 min
∴ 15500 sec = 4 hrs 18 min 20 sec

```
      258 → min
60 ) 15000
   - 120
   -----
     350
   - 300
   -----
     500
   - 480
   -----
      20 → sec
```

```
      4 → hrs
60 ) 258
   - 240
   -----
     18 → min
```

d. **9400 sec** = Second convert into min and sec
= (9400 ÷ 60) min
= 156 min 40 sec

Now, 156 minutes
(156 ÷ 60) hrs = 2 hrs 36 min
∴ 9400 sec = 2 hrs 36 min 40 sec

```
      2 → hrs
60 ) 156
   - 120
   -----
      36 → min
```

```
      156 → min
60 ) 9400
   - 60
   ----
    340
   - 300
   -----
    400
   - 360
   -----
     40 → sec
```

8. a. **120 hours into days**

(1 day = 24 hrs)

= 120 hrs ÷ 24

= 5 days

```
      5
60 ) 120
   - 120
   -----
       0
   -----
```

b. **600 hours into days**

= 600 ÷ 24

= 25 days

```
      24
24 ) 600
   -  42
   -----
     120
   - 120
   -----
       0
   -----
```

c. **7 days into hours**

= 7 × 24 hrs

= 168 hrs

d. **30 days into hours**

= 30 × 24 hrs

= 720 hrs

Exercise 12.4

1. a.

Hrs	Min
(1)	
6	25
+ 3	45
	70
	– 60
10	10

b.

Hrs	Min
(1)	
5	45
+ 2	17
	62
	– 60
3	2

c.

Hrs	Min
(1)	
7	07
+ 9	56
	63
	– 60
17	3

d.

Hrs	Min
(1)	
4	37
+ 3	18
	55

e.

Hrs	Min
(1)	
7	55
– 3	49
	104
	– 60
11	44

f.

Hrs	Min
(1)	
9	39
+ 4	42
	81
	– 60
14	21

g.

Hrs	Min
(1)	
6	56
+ 4	27
	83
	– 60
11	23

h.

Hrs	Min
(1)	
10	22
+ 6	45
	67
	– 60
17	07

2. a.

Hrs	Min
(6)	(69)
~~7~~	~~2 9~~
– 4	5 4
2	3 4

b.

Hrs	Min
3	4 5
– 1	1 6
2	2 9

c.

Hrs	Min
(5)	(102)
1	~~5~~ ~~4 2~~
– 1	0 5 9
	5 4 3

d.

Hrs	Min
(2)	(107)
~~3~~	~~4 7~~
– 2	5 8
0	4 9

e.

Hrs	Min
3	3 5
– 1	2 9
2	0 6

f.

Hrs	Min
(7)	(84)
~~8~~	~~2 4~~
– 4	5 6
3	2 8

g.

Hrs	Min
(6)	(95)
~~7~~	~~3 5~~
– 2	5 6
4	3 9

h.

Hrs	Min
(0)	(85)
~~1~~	~~2 5~~
– 0	5 9
0	2 6

Exercise 12.5

1. a.

Hrs	Min	Sec
5	40	25
+ 3	15	12
8	55	37

b.

Hrs	Min	Sec
7	10	40
+ 2	12	15
9	22	55

c.

Hrs	Min	Sec
14	30	15
+ 15	15	20
29	45	35

d.

Hrs	Min	Sec
22	05	30
+ 2	12	25
24	17	55

e.

Hrs	Min	Sec
4	50	50
+ 3	04	07
7	54	57

f.

Hrs	Min	Sec
3	15	17
+ 5	12	10
8	27	27

g.

Hrs	Min	Sec
17	20	35
+ 12	17	12
29	37	47

h.

Hrs	Min	Sec
19	35	45
+	03	14
19	18	59

2. a.

Hrs	Min	Sec
16	56	40
– 4	23	10
12	33	30

b.

Hrs	Min	Sec
23	39	35
– 12	24	22
11	15	13

c.

Hrs	Min	Sec
9	17	42
– 3	15	11
6	02	31

d.

Hrs	Min	Sec
18	48	0
– 6	20	7
12	28	2

e.

Hrs	Min	Sec
21	45	25
– 10	20	15
11	25	10

f.

Hrs	Min	Sec
17	30	55
– 12	10	25
5	20	30

g.

Hrs	Min	Sec
17	25	45
– 7	12	30
10	13	15

h.

Hrs	Min	Sec
8	45	55
– 4	40	12
4	05	40

Exercise 12.6

(1 hr = 60 min and 1 min = 60 seconds)

1.

Hrs	Min	Sec
(1)	(1)	
5	3 5	3 0
+ 6	2 7	4 8
	6 3	7 8
	– 6 0	– 6 0
12	3	1 8

2.

Hrs	Min	Sec
(1)	(1)	
3	5 5	10
+ 2	2 5	59
	8 1	69
	– 6 0	– 60
6	2 1	9

3.

Hrs	Min	Sec
(1)	(1)	
4	25	53
+ 2	43	48
	69	101
	– 60	– 60
7	9	41

4.

Hrs	Min	Sec
(1)	(1)	
3	39	37
+ 4	29	54
	69	91
	– 60	– 60
8	9	31

5.

Hrs	Min	Sec
(1)	(1)	
9	19	27
+ 2	55	46
	75	73
	– 60	– 60
12	15	13

6.

Hrs	Min	Sec
(1)	(1)	
7	57	26
+ 2	26	38
	84	64
	– 60	– 60
10	24	04

7.

Hrs	Min	Sec
(1)	(1)	
7	49	35
+ 6	52	36
	102	71
	– 60	– 60
14	42	11

8.

Hrs	Min	Sec
(1)	(1)	
4	53	25
+ 2	45	55
	99	80
	– 60	– 60
7	39	20

Exercise 12.7

1.

Hrs	Min	Sec
(8)	(90)	
~~9~~	~~30~~	54
– 5	57	20
3	33	34

2.

Hrs	Min	Sec
	(54)	(90)
~~7~~	~~55~~	~~20~~
– 3	14	45
4	40	35

3.

Hrs	Min	Sec
(6)	(19)	(105)
~~7~~	~~20~~	~~45~~
– 3	47	50
3	32	55

4.

Hrs	Min	Sec
(17)	(97)	
~~18~~	~~37~~	~~52~~
– 5	45	20
12	52	32

5.

Hrs	Min	Sec
13	81	
~~14~~	~~21~~	~~57~~
– 12	38	52
1	43	05

6.

Hrs	Min	Sec
	76	
25	16	85
~~25~~	~~17~~	25
– 15	29	39
10	47	46

7.

Hrs	Min	Sec
	84	
7	24	72
~~8~~	~~23~~	12
– 5	45	33
2	39	39

8.

Hrs	Min	Sec
	49	85
~~7~~	~~50~~	~~25~~
– 3	45	45
4	07	40

Exercise 12.8

1. Starting time of school = 9.30 a.m. or 0930 hrs
Time period for periods = 50 min
Time period for 2 periods = 50 + 50 = 100 min
Current time = 0930 + 100 min = 1 hr 40 min
1110 hrs = 11 : 10 a.m.

Hrs	Min
1	
9	3 0
+ 1	0 0
1 1	1 0

2. Starting time of film = 5 : 45 p.m.
Ending timed film = 8 : 15 p.m.
Total duration of film = 2 hrs 30 min

Hrs	Min
7	75
~~8~~	~~15~~
– 5	4 5
2	3 0

3. Time taken by train = 3 hrs 45 min
Total time taken by bus = 2 hrs 50 min
Total time taken by journey = 3 hrs 45 min + 2 hrs 50 min
= 6 hrs 35 min

Hrs	Min
1	
3	4 5
+ 2	5 0
	9 5
	– 6 0
6	3 5

4. Begging time of circus show = 3 : 15 p.m.
Ending time of circus show = 6 : 35 p.m.
Time duration = 6 hrs 35 min 3 hrs 15 min
= 3 hrs 20 min

Hrs	Min
6	3 5
– 3	1 5
3	2 0

5. Departure time = 9 : 55 p.m.
Arrival = 5.05 a.m.
Total time taken = 9 : 55 → 12 : 00 → 5 : 05
2 hrs 5 min 2 hrs 5 min
Time taken = 2 hrs 5 min + 5 hrs 5 min
= 7 hrs 10 min

Hrs	Min
2	5
+ 5	5
7	1 0

6. Sun rising time = 5 : 35 a.m. or 0535 hrs
Sun setting time = 5 : 55 p.m. or 1755 hrs
Time between = 1755 – 0535
= 1220
Time between sunrise and sunset = 12 hrs 20 min

7. Arrival time = 4 : 10 p.m.
Departure time = 2 : 50 p.m.
Time taken = 4 hrs 10 min – 2 hrs 50 min
= 1 hrs 20 min

Hrs	Min
3	70
~~4~~	~~1 0~~
– 2	5 0
1	2 0

8. Bus leaves at = 9 : 45 a.m.
Time taken = 7 hrs
Reaching time = 9 hrs 45 min + 7 hrs
= 16 hrs 45 min or 4 : 45 p.m.

Hrs	Min
9	4 5
+ 7	0 0
1 6	4 5

Exercise 12.9

1. a. January has **five** Sundays.
b. The summer holidays start on **1 June** and end on **30 June.**
c. September has **30** Days.
d. There are **4** Saturdays in May.
e. The 2nd of October is a **Sunday.**
f. Christmas is on **25** December which a **Sunday.**
g. There are **7** Days in a week and **5** Weeks in a month.
h. A year has **365/366** Days and **52** Weeks.

2. a. Number of days from Jan. 29 to April 16

Jan	Feb	March	April
3	29	31	16

Total days = 3 + 29 + 31 + 16 = 79 day

b. Days in May = 2
Days in April = 23 – 2 = 21
Total day in April = 30
Starting date = 31 – 21 = 9 April

c. Joining date = 15 Feb 2004
left = 27 Dec 2004
Working days = 15 Feb →27 Dec

Feb	March	April	May	June	July	Aug
15	31	30	31	30	31	31

Sep	Oct	Nov	Dec
30	31	30	27

Total days = 15 + 31 + 30 + 31 + 30 + 31 + 31 + 30 + 31 + 30 + 27
= 317 days

d. Vacations date = 15 May to 28 June
Number of days = 17 + 28 = 45 days

Thus 45 days will the school remain closed.

May		June
17	+	28

Mental Gym

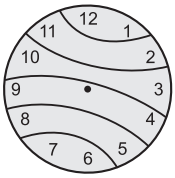
A. 1. a. 2. d. 3. b.
4. c. 5. c.

B. a. 4 : 00 p.m. = **1600 hours** b. 7 : 30 a.m. = **0730 hours**

C. a. 9 : 45 hours = **09 : 5 a.m.** b. 16 : 20 hours = **04 : 20**

HOTS

1.



2. Sleeping time = 6 o' clock in evening
Awake time = 8 o' clock in morning
Time taken =

6 : 00 → 12 : 00 → 8 : 00

6 hrs 8 hrs

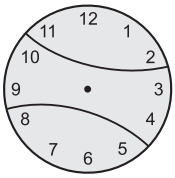
6 hrs + 8 hrs = 14 hrs

Have a Fun

1. Can you guess? The year was **1961.**

2. 1771, 1881, 1991, 2002, 2112, **2332.**

3.



13 Money

Exercise 13.1

1. b. ₹ 5.94 c. ₹ 87.06 d. ₹ 5.07
e. ₹ 20.50 f. ₹ 18.08

2. b. ₹ 35.40 = Rupees thity-five and fourty paise.
c. ₹ 85.10 = Rupees eighty-five and ten paise.
d. ₹ 55.35 = Rupees fifty five and thirty-five paise.
e. ₹ 20.40 = Rupees twenty and fourty paise.
f. ₹ 15.75 = Rupees fifteen and seventy-five.

Exercise 13.2

1. a.

	₹	P.
	(1)(1)	(1)
	2 4 7 . 4 5	
	4 7 . 2 6	
+	1 4 5 . 1 3	
	4 3 9 . 8 4	

b.

	₹	P.
	(1)(1)(1)	
	5 4 5 . 7 5	
	3 6 . 5 0	
+	1 7 6 . 3 0	
	7 5 8 . 5 5	

c.

	₹	P.
	(1)(1)	(1)
	4 3 5 . 4 9	
	9 3 8 . 2 5	
+	2 2 2 . 3 4	
	2 5 9 6 . 8 8	

d.

	₹	P.
	(1)(1)(1)	(1)
	1 6 2 5 . 4 5	
	2 3 4 . 2 3	
+	3 8 5 . 0 9	
	2 2 4 4 . 7 7	

e.

₹	P.
1 1 1 1	
8 1 5	3 6
1 7 2 9	4 8
+ 4 2 6	2 5
2 9 7 1	0 9

f.

₹	P.
1 1 1	
7 2 5	7 3
9	3 5 4
+ 3	8 1 2
8 5	7 3 9

g.

₹	P.
1 1 1 1 1	
4 6 9 5	9 5
3 9 8 0	2 6
+ 1 4 5	1 3
8 8 2 1	3 4

h.

₹	P.
1 1 1 1 1	
4 7 8 5	2 5
6 2 8 6	5 3
+ 1 4 6	2 5
1 1 2 1 8	0 3

2. a.

₹	P.
11 13 10	
6 ~~1~~ ~~3~~ ~~0~~ 18	
~~7~~ ~~1~~ ~~4~~ ~~1~~ . ~~8~~	5
– 3 2 4 9 . 9	0
3 9 9 1 . 9	5

b.

₹	P.
13 14	
8 3 4 14	
~~9~~ ~~4~~ ~~5~~ . ~~4~~	8
– 4 9 5 . 7	2
4 4 9 . 7	6

c.

₹	P.
15	
2 ~~5~~ 13	
~~3~~ ~~6~~ ~~3~~ . 8	4
– 2 9 5 . 5	2
6 8 . 3	2

d.

₹	P.
13 10 15	
7 ~~3~~ ~~9~~ ~~5~~ 14	
~~8~~ ~~4~~ ~~1~~ . ~~6~~	~~4~~
– 7 9 3 . 7	5
4 7 . 8	9

e.

₹	P.
11 13 10	
4 ~~1~~ ~~3~~ ~~0~~ 17	
~~5~~ ~~2~~ ~~4~~ ~~1~~ . ~~7~~	5
+ 2 2 4 5 . 9	0
2 9 9 5 . 8	5

f.

₹	P.
4 14 8 14	
~~5~~ ~~4~~ ~~9~~ . ~~4~~	8
– 3 9 5 . 7	2
1 5 3 . 7	6

g.

₹	P.
11 12	
5 ~~7~~ ~~2~~ 14	
~~6~~ ~~3~~ ~~3~~ . ~~4~~	~~8~~
– 4 9 5 . 5	2
1 3 7 . 9	6

h.

₹	P.
11 12	
5 ~~7~~ ~~2~~ 14	
~~6~~ ~~3~~ ~~3~~ . ~~4~~	~~6~~
– 4 9 5 . 7	5
1 3 7 . 7	1

Exercise 13.3

1. **Bill**

a.

S.No.	item	Quantity	Price in (₹)	Amount (₹)	
1.	Rice	2 kg	35/-	₹ (35 × 2)	70
2.	Sugar	1 kg	18/-	₹ (18 × 1)	18
3.	Butter	500 g	55/-		55
					143

b.

S.No.	item	Quantity	Price in (₹)	Amount (₹)	
1.	Mustard Oil	*l*	62.50/-		62.50
2.	Salt	4 kg	6/-	₹ (6 × 4)	24
3.	Atta	20 kg	15/-	₹ (15 × 20)	300
					386.5

c.

S.No.	item	Quantity	Price in (₹)	Amount (₹)	
1.	Rice	5 kg	35/-	₹ (35 × 5)	175
2.	Atta	10 kg	15/-	₹ (15 × 10)	150
3.	Salt	1 kg	6/-		6
4.	Washing soap	500 g	22/-	₹ (22 ÷ 2)	11
					342

d.

S.No.	item	Quantity	Price in (₹)	Amount (₹)	
1.	Masoor dal	2 kg	27/-	(27 ×2)	84
2.	Rice	2 kg	35/-	(35 × 2)	70
3.	Sugar	2 kg	18/-	(18 × 2)	36
					190

e.

S.No.	item	Quantity	Price in (₹)	Amount (₹)	
1.	Rice	500 g	35/-	(35 ÷ 2)	17.50
2.	Atta	2 kg	15/-	(15 × 2)	30
3.	Butter	100 g	55/-	(55 ÷ 5)	11
4.	Moong dal	500	27/-	(27 ÷ 2)	13.50
					72.00

2.

Honey Provision Store		
Item	**Quantity**	**Price (in ₹)**
Salt	1 kg	6
Atta	1 kg	15
Butter	1 kg	110
Washing soap	1 kg	22
Mustard oil	1 litre	62.50
Masoor dal	1 kg	21
Moong dal	1 kg	27
Sugar	1 kg	18
Rice	1 kg	35
	Total	**316.50**

Money received back = ₹ (500 – 316.50) = ₹ 183.50

Exercise 13.4

1. Money lost in the market = ₹ 37.00
Money left = ₹ 85.15
She have money = ₹ 37 + 85.15
= ₹ 122.15
Thus, she have money ₹ 122.15.

₹	P.
(1)	
3 7 . 0 0	
+ 8 5 . 1 5	
1 2 2 . 1 5	

2. Cost of a school bag = ₹ 225.50
Cost of a pencil box = ₹ 80.25
Cost of pen = ₹ 35.90
Total money spend = ₹ (225.50 + 80.25 + 35.90)
= ₹ 341.60
Thus, Mohan spend ₹ 341.60 money.

₹	P.
(1)(1)(1)	
2 2 5 . 5 0	
8 0 . 2 5	
+ 3 5 . 9 0	
3 4 1 . 6 0	

3. Cost of TV set = ₹ 30745.20
Amount paid in Instalments = ₹ 22395.75
Money left to be paid = ₹ (30745.20 – 22395.75)
= ₹ 8349.45
Thus, ₹ 8349.45 is left to be paid.

₹	P.
3 0 7 4 5 . 2 0	
– 2 2 3 9 5 . 7 5	
8 3 4 9 . 4 5	

4. Cost of book = ₹ 18.75
Money with Divya = ₹ 10
Money left to be paid = ₹ (18.75 – 10)
= ₹ 8.75
Thus ₹ 8.75 left to abe paid.

₹	P.
1 8 . 7 5	
– 1 0 . 0 0	
8 . 7 5	

5. Cost of a shirt = ₹ 64.50
Cost of shorts = ₹ 18520
She pay = ₹ 64.50 + 185.20
= ₹ 249.70
Thus, she pay ₹ 249.70.

	₹	P.
1		
	6 4 . 5 0	
+	1 8 5 . 2 0	
	2 4 9 . 7 0	

6. Monthly income = ₹ 1575.80
He spend money = ₹ 1280.70
Money left = ₹ (1575.80 – 1280.70)
= ₹ 295.1
Thus, ₹ 295.1 money left.

	₹	P.
	1 5 7 5 . 8 0	
–	1 2 8 0 . 7 0	
	2 9 5 . 1 0	

7. Purchase value = ₹ 175.50
Sale value = ₹ 250.90
Profit = ₹ (250.90 – 175.50)
= ₹ 75.40
He gain ₹ 75.40.

	₹	P.
	2 5 0 . 9 0	
–	1 7 5 . 5 0	
	7 5 . 4 0	

8. Cost of scooter = ₹ 27760.25
Instalments paid = ₹ 25870.80
Money left to be paid = ₹ (27760.25 – 25870.80)
= ₹ 1889.45
Thus, ₹ 1889.45 money left to be paid.

	₹	P.
	2 7 7 6 0 . 2 5	
–	2 5 8 7 0 . 8 0	
	1 8 8 9 . 4 5	

9. Cost of chocolate = ₹ 1.75
Number of chocolate = ₹ 15
Total cost of chocolate = ₹ 1.75 × 15
= ₹ 26.25
Thus, she spent ₹ 26.25.

	1 7 5
×	1 5
	8 7 5
	1 7 5 0
	2 6 2 5

10. Cost of ice-cream bought = ₹ 745.25
Cost of pizzas = ₹ 350.45
Cost of cold drink = ₹ 160.25
Total money spent = ₹ (945.25 + 350.45 + 160.25)
= ₹ 1255.95

	₹	P.
	7 4 5 . 2 5	
	3 5 0 . 4 5	
+	1 6 0 . 2 5	
	1 2 5 5 . 9 5	

11. Currency note of Rupees 100 = 2
Currency note of Rupees 50 = 1
Currency note of Rupees 10 = 7
Total money 9 have = ₹ (2 × 100 + 50 × 1 + 7 × 10)
= ₹ (200 + 50 + 70) = ₹ 320

12. Monthly income of Manu = ₹ 343200
Money spent by Manu = ₹ 123065
Money left with Manu = ₹ (343200 – 123065)
= ₹ 220135

```
  343200
- 123065
  220135
```

13. Cost of one soap cake = ₹ 26.250
Cost of 6 soap cake = ₹ 26.250 × 6
= ₹ 157.500
Thus, cost of 6 soap cake are ₹ 157.50.

```
  26.250
×      6
 157.500
```

14. Money gave to the shopkeeper = ₹ (1000 + 500) = ₹ 1500
Cost of dress = ₹ 1270
Money received = ₹ (1500 – 1270)
= ₹ 230

```
  1500
- 1270
   230
```

15. Number of coin rupees 5 = 5
Number of coin rupees 2 = 3
Number of coin rupees 10 = 6
Total money = ₹ (5 × 5) + (2 × 3) + (10 × 6)
= ₹ (25 + 6 + 60) = ₹ 91

16. Money with Ramesh = ₹ 735.20
Money given to him buy him = ₹ 505.00
Total amount = ₹ (735.50 505)
= ₹ 230.20

```
   ₹ . P.
  735.20
- 505.00
  230.20
```

Mental Gym

A. 1. b. 2. a. 3. b.
4. d. 5. c.

B. 1. F 2. T 3. T
4. F 5. T

HOTS

Total value of coins of rupee 5 = ₹ 5 × 4 = ₹ 20
Total value of coins of rupees 2 = ₹ 2 × 4 = ₹ 8
Total value of coins of paise 50 = 2.5 × 4 = ₹ 2
Total money = ₹ 20 + ₹ 8 + ₹ 2 = ₹ 30
Thus, there are ₹ 30 in the bags.

Have a Fun

Money = ₹ (1245 + 560 + 400) = ₹ 2205
Spend money = ₹ (152.50 + 456.75 + 250 + 630 + 50) = ₹ 1539.25

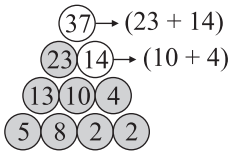
Mrs Khanna has ₹ **665.75** when she comes back home. Find out from your parents regarding the use of credit card (plastic money) and its payment. Has Mrs Khanna bought anything on credit? If yes, what and for how much? **Saree for ₹ 2000**

Money she spent is what fraction of the amount she was carrying?

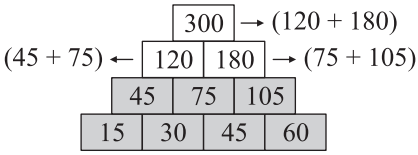
$$\frac{153925}{220500} = \frac{6157}{8820}$$

Exercise 14.1

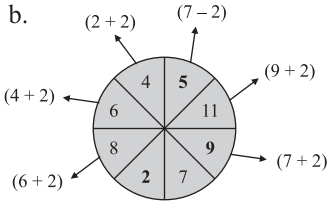
1. b.



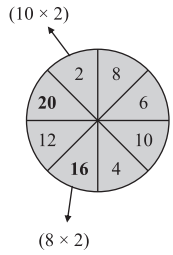
c.



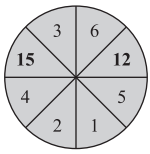
2. b.



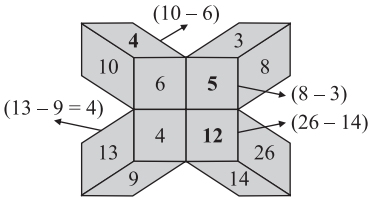
c.



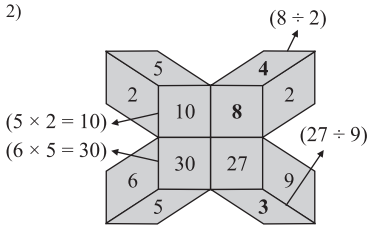
d.



3. b.



c.



4.

a.	2, 4, 6, 2, 4, 6,	**2**	**4**	**6**
b.	4, 8, 12, 16, 20, 24,	**28 (4 × 7)**	**32 (4 × 8)**	**36 (4 × 9)**
c.	1, 4, 9, 16, 25, 36,	**49 (7^2)**	**64 (8^2)**	**81 (9^2)**
d.	2, 4, 6, 8, 10, 12	**14 (2 × 7)**	**16 (2 × 8)**	**18 (2 × 9)**
e.	3, 6, 9, 12, 15, 18,	**21 (3 × 7)**	**24 (3 × 8)**	**27 (3 × 9)**
f.	1, 3, 5, 7, 9, 11, 13	**(11 + 2)**	**(13 + 2)**	**(15 × 7)**

5.

a.	47	=	**11**	=	**(Sum of 4 + 7 i.e. 1 + 1)**	**2**
b.	66	=	**12**	=	**(Sum of 6 + 6 and 1 + 3)**	**3**
c.	125	=	**8**		**(Sum of 1 + 2 + 5)**	**8**
d.	236	=	**11**		**(Sum of 2 + 3 + 6 and 1 + 1)**	**2**

6. a. 1111 × 1111 = 1234321
11111 × 11111 = 123453421

b. 1234 × 7 + 4 = 8642
12345 × 7 + 5 = 86420

c. 4 + 5 + 6 = 15
5 + 6 + 7 = 18

d. 8000 + 2000 = 10000
80000 + 20000 = 100000

7. a. 4 × 4 = 16
44 × 4 = 176
444 × 4 = 1776
4444 × 4 = **17776**
44444 × 4 = **177776**

b. 404 × 404 = 163216
505 × 505 = 255025
606 × 606 = 367236
707 × 707 = **499849**

8.

Number of squares	1	4	9	16	25	**36**	49	**64**
Number of dots	4	9	16	25	**36**	49	**64**	81

9. a. 2, 2, 4, 6, 10, 16, 26, 42, **68, or 110**

Mental Gym

1. b. 2. a. 3. b.

15 Geometry

Exercise 15.1

1. a. **AB =**

A 3.2 cm B

b. **CD =**

C 4.2 cm D

c. **EF =**

E 5.3 cm F

2. a. **AB = 5.8 cm**

A 5.8 cm B

CD = 7.4 cm

C 7.4 cm D

b. **EF = 8.5 cm**

E 8.5 cm F

GH = 3.6 cm

G 3.6 cm H

c. **IJ = 4.9 cm**

I 4.9 cm J

KL = 3.1 cm

K 3.1 cm L

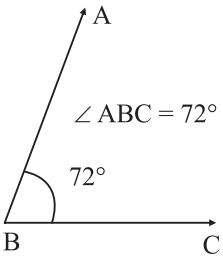
Exercise 15.2

1. a. Right angle b. Acute angle c. Obtuse angle
d. Straight angle e. Reflex angle f. Whole angle

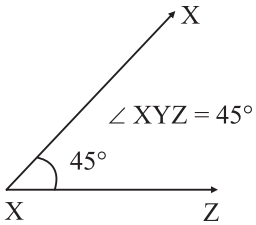
2. a. JKL = **220** b. XYZ = **60°** c. ABC = **60°** d. RST = **90°**
e. MNO = **135°** f. PQR = **90°** g. GHI = **30°** h. LMN = **60°**

Exercise 15.3

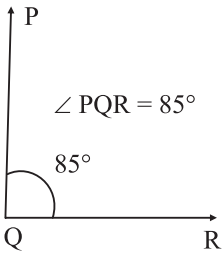
1. a.



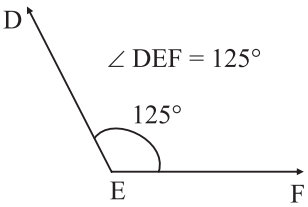
b.



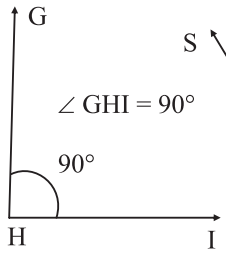
c.



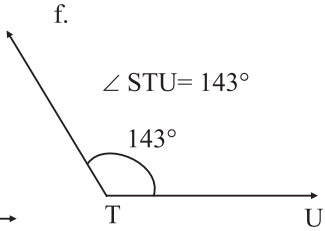
d.



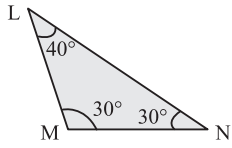
e.



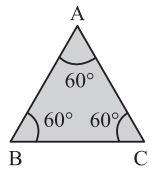
f.



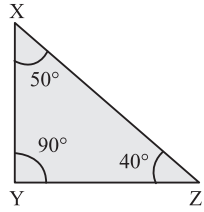
2. a.



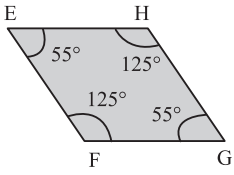
b.



c.



d.



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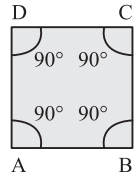

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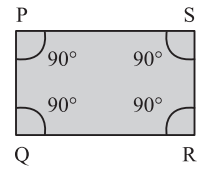


Exercise 15.4

1. a. Equilateral triangle
b. Isosceles Triangle
c. Equilateral triangle
d. Scalene triangle
e. Scalene triangle
f. Scalene triangle

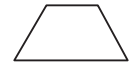
2. a. Acute angled triangle
b. Obtuse angled triangle
c. Acute angled triangle
d. Obtuse angled triangle
e. Right angled triangle
f. Acute angled triangle

3. a. An obtuse angled triangle has **an** obtuse angle.
b. For acute angled triangle all **angles** must be acute.
c. An **isosceles** triangle has no equal sides.
d. An **equilateral** triangle has three equal sides.
e. A **scalene** triangle has no equal sides.
f. In an obtuse triangle the other two angles must be **acute.**
g. In an equilateral triangle all the angles are **60°.**
h. in an isosceles triangle has base angles are **equal.**

Exercise 15.5

1. a.

b.

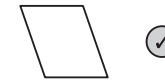


c.

d.

e.

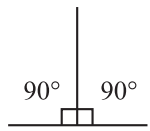
f.



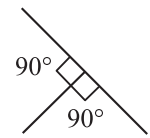
2. a. Parallelogram
b. Rectangle
c. Square
d. Rectangle
e. Square
f. Parallelogram
g. Rectangle
h. Parallelogram

Exercise 15.6

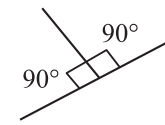
1. a.

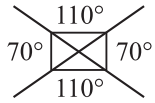


b.

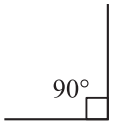


c.

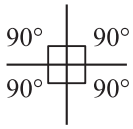


d. 

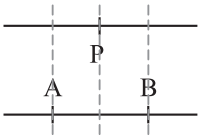
✗

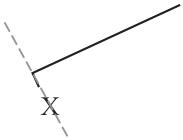
e. 

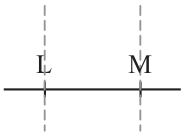
✗

f. 

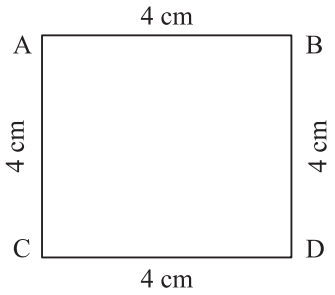
✓

2. 

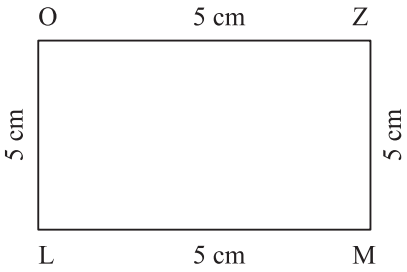




3. a. Square ABCD of each side 4 cm.



b. Rectangle LMNO of Length 5 cm and breadth 3 cm



Mental Gym

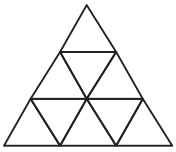
A. 1. b. 2. d. 3. a.

B. 1. All the radii of a circle are **equal.**
2. The length of the boundary of a circle is called its **circumference.**
3. The **diameter** is the longest chord of a circle.
4. The space between the arms of an angle is called the **interior** of the angle.

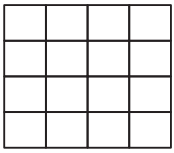
C. 1. True 2. False 3. True 4. False

HOTS

1. 13 triangles

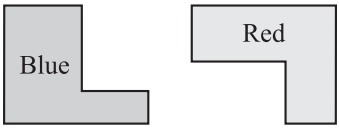


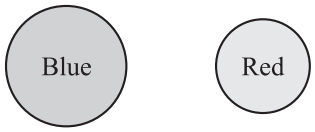
2. 25 squares

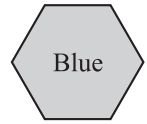


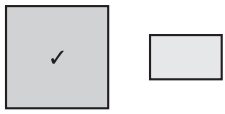
16 Area and Perimeter

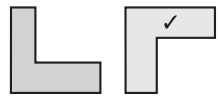
1. a. 

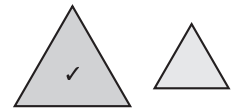
b. 

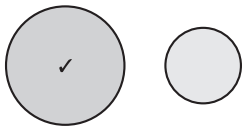
c. 

d. 

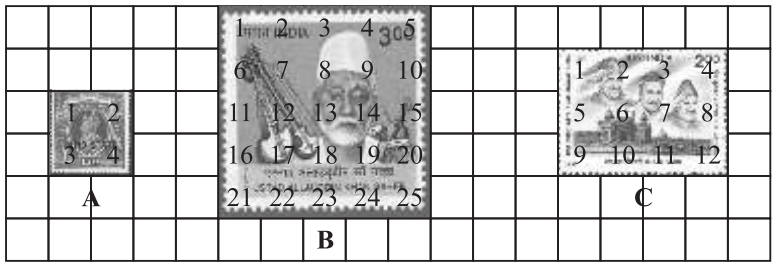
2. a. 

b. 

c. 

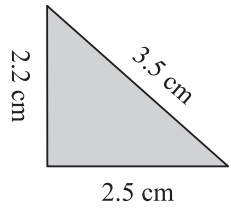
d. 

e. 

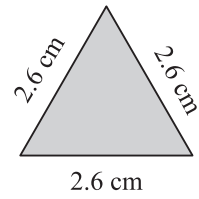
3. 

a. Stamp A covers **4** number of squares.
b. Stamp B covers **25** number of squares.
c. Stamp C covers **12** number of squares.
d. A stamp covers the maximum number of squares. **25**

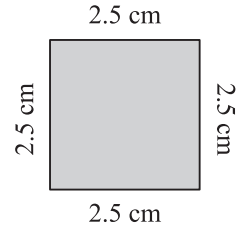
Exercise 16.1

1. a. 

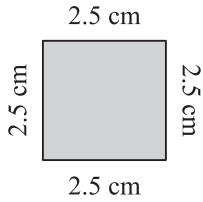
P = (2.2 + 3.5 + 2.5) cm
P = 8.2 cm

b. 

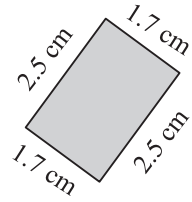
P = (2.6 + 2.6 + 2.6) cm
P = 7.8 cm

c. 

P = (2.5 + 2.5 + 2.5) cm
P = 10 cm

d. 

P = (2.5 + 3 + 2.5 + 3) cm
P = 11 cm

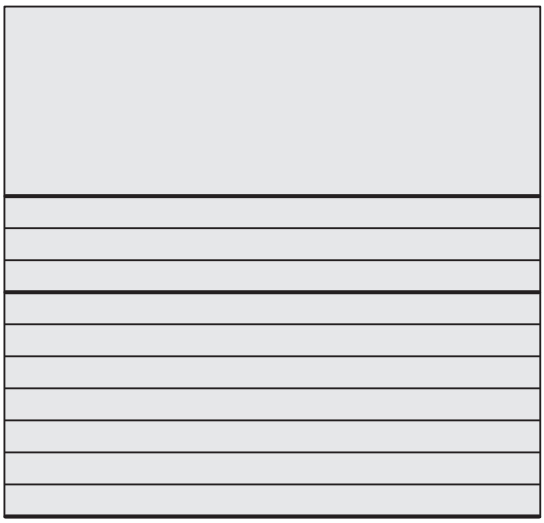
e. 

P = (1.7 + 2.5 + 1.7 + 2.5) cm
P = 8.4 cm

2.

	L	B	P = 2 × (L + B)
	8	3	2 × (8 + 3) 2 = 22 cm
a.	4	2	2 × (4 + 2) = 2 × 6 = 12 cm
b.	8	5	2 × (8 + 5) = 2 × 13 = 26 cm
c.	7	3	2 × (7 + 3) = 2 × 10 = 20 cm
d.	6	5	2 × (6 + 5) = 2 × 11 = 22 cm
e.	8	9	2 × (8 + 9) = 2 × 17 = 34 cm
f.	3	4	2 (3 + 4) = 2 × 7 = 14 cm
g.	10	5	2 (10 + 5) = 2 × 15 = 30 cm
h.	6	2	2 (6 + 2) = 2 × 8 = 16 cm

3.



4. a. **Sides = 10 cm, 12 cm, 14 cm**

Perimeter = Sum of sides

Perimeter = (10 + 12 + 14) cm = 36 cm

b. **Sides = 15 m, 14 m, 10 m**

Perimeter = Sum of sides

Perimeter = (15 + 14 + 10) cm = 39 cm

c. **Sides = 3 cm, 5 cm, 4 cm**

Perimeter = Sum of sides

Perimeter = (5 + 3 + 4) cm = 12 cm

d. **Sides = 16 m, 17 m, 8 m**

Perimeter = Sum of sides

Perimeter = (16 + 17 + 8) m = 41 m

e. **Sides = 42 cm, 38 cm, 56 cm**

Perimeter = Sum of sides

Perimeter = (42 + 38 + 56) cm = 136 cm

f. **Sides = 23 m, 42 m, 15 m**

Perimeter = Sum of sides

Perimeter = (23 + 42 + 15) m = 80 m

5. a. **Length = 4 cm, breadth = 3 cm**

Perimeter = 2 (l + b)

Perimeter = 2 (4 + 3) cm = 2 × 7 = 14 cm

b. **Length = 10 cm, breadth = 5 cm**

Perimeter = 2 (l + b)

Perimeter = 2 (10 + 5) cm = 2 × 15 = 30 cm

c. **Length = 15 cm, breadth = 10 cm**

Perimeter = 2 (l + b)

Perimeter = 2 (15 + 10) cm = 2 × 25 cm = 50 cm

d. **Length = 7 cm, breadth = 5 cm**

Perimeter = 2 (l + b)

Perimeter = 2 (7 + 5) cm = 2 × 12 cm = 24 cm

6. a. Side = 4 cm; Perimeter = 4 × side = 4 × 4 = 16 cm

b. Side = 10 cm; Perimeter = 4 × side = 4 × 10 = 40 cm

c. Side = 20 m; Perimeter = 4 × side = 4 × 20 = 80 cm

d. Side = 5 km; Perimeter = 4 × side = 4 × 5 = 20 km

e. Side = 13 m; Perimeter = 4 × side = 4 × 13 = 52 m

f. Side = 15 cm; Perimeter = 4 × side = 4 × 15 = 60 cm

Exercise 16.2

1. Length of carpet = 1 m

wide length of carpet = 8 m

Area of carpet = l × b = 1 × 8 = 8 m^2

Perimeter = 2 × (l + b)

= 2 × (1 + 8) = 2 × 9 = 18 cm

Thus, Area = 8 m^2; Perimeter = 18 cm.

2. Length of a field = 50 m

breadth of a field = 35 m

Area = length × breadth = 50 × 35 = 1750 m^2

Perimeter of a field = 2 (length + breadth)

= 2 (50 + 35) cm = 2 × 85 m = 170 m

Area = 1750 m^2, Perimeter = 170 m of a field.

3. Length of a lawn = 15 m

Breadth of a lawn = 8 m

Area of lawn = length × breadth

= 15 × 8 m^2 = 120 m^2

Perimeter of lawn = 2 (l + b)

= 2 (15 + 8) cm = 2 × 23 = 46 cm

Thus, area of lawn is 120 m^2; and perimeter = 46 m.

4. Length of room = 25 m

Breadth of room = 15 m

Area of room = length × breadth

= 25 × 15 m^2 = 375 m^2

Perimeter of room = 2 (l + b) = 2 (25 + 15)

= 2 × 40 = 80 m

Thus, area 375 m^2 and perimeter 80 m of a room.

5. Length of road = 15 m

Breadth of road = 3 m
Area of road = $l \times b = 15 \times 3\ m^2$ = $45\ m^2$
Perimeter of road = $2\ (l + b)$ = $2\ (15 + 3)$
= 2×18 m = 36 m

Thus, Area 45 m^2 and perimeter 36 m of road.

6. Length of material = 6 m
Breadth of material = 3 m
Area = length × breadth = $6 \times 3\ m^2$ = $18\ m^2$
Perimeter = $2\ (l + b)$ = $2\ (6 + 3)$
= 2×9 = 18 m

Material area is 18 m^2 and perimeter 180 m.

7. Length of swimming pool = 32 m
Breadth of swimming pool = 15 m
Area = length × breadth = $32 \times 15\ m^2$ = $480\ m^2$
Perimeter = 2 (length + breadth)
= 2 (32 + 15) m = 2×47 m
= 94 m

Thus, the area 480 m^2 and perimeter 94 m of the pool.

8. Length of playing field = 28 m
Breadth of playing field = 15 m
Area of playing field = length × breadth
= $28 \times 15\ m^2$ = $420\ m^2$
Perimeter of playing field = $2\ (l + b)$ = $2\ (28 + 15)$ m
= 2×43 m = 86 m

The area 420 m^2 and perimeter 86 cm of playing field.

9. Perimeter of a rectangle = 60 m
Breadth of rectangle = 12 m
Perimeter = 2 (length + breadth)
60 = 2 (length + 12) m
60 = 2 length + 24 m
2 length = 60 – 24 m
length = $36 \div 2 = 18$ m

length of rectangle is 18 m.

10. Side of square field = 120 m
Perimeter = 2 × side
= 2×120 m = 480 m

Thus, the length of the required wire 480 m.

Mental Gym

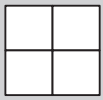
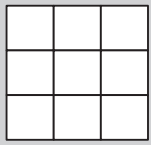
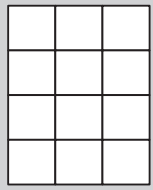
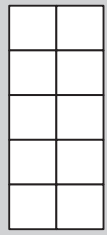
A. 1. c. 2. b. 3. a. 4. b.

B. 1. The length of a figure is its **perimeter.**
2. The perimeter of a field is 400 m. How much distance is covered by Vijay if he takes two rounds of the field? **800 m (400 × 2)**
3. A triangle has a perimeter of 50 cm. If the sum of two sides is 30 cm, what is the length of the third side? **20 cm (50 – 30)**
4. Which is more the area of your Maths book or the area of your Maths note book? **Math's book**

HOTS

Number of poles in one side of land = 37
Sides = 4
∴ Number of poles = 37 × 4 = 148.

Have a Fun

Box	A	B	C	D
				
Shape Square Area	Rectangle 4 cm^2	Cylinder 9 cm^2	Rectangle 12 cm^2	 10 cm^2

1. 
Box **C**

2. 
Box **D**

3. 
Box **A**

4. 
Box **B**